SUMMARY OF A

Lecture

ON THE

TREATMENT OF LUNG TUBERCLE.

Delivered at the City of London Hospital for Diseases of the Chest, on July 2nd, 1884,

BY G. A. HERON, M.D.,

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GENTLEMEN,—In dealing with the subject of the treatment of lung tubercle, it is not my intention to go into details concerning all the modes of treating that disease which are in general use. To do that would require much more time than we have at our disposal; and, indeed, I much doubt whether any attempt of the kind would be really useful. The history of the treatment of consumption, remarkable though it is in many respects, does not, I think, strike one who studies it as being the record of a great triumph of medical science over disease. The fact that many different remedies are now employed in the effort to combat this disease proves, that no one remedy can be implicitly relied upon for good results in all cases. It falls to the lot of medical men, in their every-day work, to make many curious experiences; and amongst these experiences there are some unpleasant ones. Everyone who practises medicine will certainly make two unpleasant experiences before he has been long engaged in the treatment of disease. It will often happen to each one of us to stand by the bedside of some poor sufferer, whose every look, whose every word, speaks eloquently of the hopeful trust he has placed in the skill of the man to whom he has turned for help in his time of sore need. How sad and how bitter it is, in such a case, for the physician to find that, beyond the shadow of a doubt, medical science can do nothing to turn death away from his patient! The knowledge that the conditions are few in which, even in the most desperate cases, suffering cannot be lessened, and the way to death made easier by the use of remedies, does not bring very much consolation with it to the physician. There is bitterness enough for us in such an experience as that, without, as now and then happens, the additional sting of hearing, after the case has ended, that certain of the patient's friends had felt sure that had Dr. So-and-so been consulted things might have turned out very differently for the sick man: that is one of two unpleasant experiences certain to happen to us all. It will also certainly happen to us all to receive the expression of the heartfelt gratitude of a patient, who tells us that he owes his life to our efforts, and that, but for our able treatment of his case, he would have been lost to those who are nearest and dearest to him; and while our patient is pouring out his eager thanks, a horrible thought may arise in us, and we may be obliged to confess to ourselves and to him, that we have very good grounds for doubting whether our interference in his case has been of so high a value as he believes it to have been. Now, I think that those of us who are often asked to direct the treatment of consumption are especially apt to suffer both of these painful experiences, and I do not know which of the two is the more distressing.

It is important to bear in mind that the progress of consumption is rarely one of rapid decline. In the majority of instances lung tubercle progresses by leaps and bounds, interspersed with frequent, and sometimes prolonged, periods of apparent arrest of the disease. That fact must never be forgotten when one is endeavouring to estimate the value of any given line of treatment. Until we can point to a long series of cases where permanent arrest of the disease has practically always followed the use of certain remedies, the most that we are entitled to say of any treatment of lung tubercle is that its use is often followed by improvement in the patient's condition. That that improvement is occasionally the beginning of the permanent arrest of the disease, and of the consequent restoration of the patient to health, is a matter within the experience of everyone who has seen much of lung tubercle. But if, in such a happy event, we attempt to make an estimate of the value of the treatment we have used, we are at once confronted with the fact, that in very many cases no good whatever—or practically none—has resulted from this same treatment; and also that failure, so far as permanent arrest of the disease is concerned, has, in the majority of cases, followed the use of the treatment under consideration. Let us suppose that we send a hundred patients abroad to spend the winter in a mountain climate, having previously detected in their expectoration the bacillus of tubercle. We select these persons with due regard to those conditions of disease which, it is said, ought to mark cases as being of the type most likely to benefit from a residence in such a climate. Well, of the hundred a considerable majority will return to England distinctly the better for their trip to the mountains. Amongst the majority will be found a few who, judged of by their appearance, are literally "pictures of good health." We shall probably see amongst them a young man who left home pale, emaciated, feeble, tormented by a constant cough, distressed by profuse night sweats, and who, it may be, had suffered from the effects of lung hæmorrhage, more or less severely. Instead of the emaciated frame, the pale face, and the stooping shoulders, which characterised this young man's appearance before he left home, we see a sun-browned face, an erect and seemingly vigorous frame, and we have the pleasure of hearing that our patient seldom or perhaps practically never coughs, and that night sweats and blood spitting have long since ceased to trouble him. Fortunately it does occasionally happen that such a patient seems to have been permanently cured, and an examination of his chest shows us that the evidences of active disease have disappeared. But in the majority of such hopeful-looking cases we find, on examination, that in spite of the great and strikingly evident improvement in our patient's appearance, the cavity which he had in one of his lungs when he left home is not healing, and it may even be larger than it was when we last saw him. In short, though his general health has benefited vastly, new colonies of bacilli have made fresh lodgments in his lungs. The meaning of all this is that our patient's disease has passed into a condition of comparative quiescence, owing, most probably in great part, to the good effects of the climate he has just left. But then, such good results are by no means very common amongst those who spend a winter amongst the mountains. The benefit, as a rule, is less marked, and, even at the best, is too apt to be but temporary. Nor are such benefits to be obtained only from residence at a mountain station. Egypt, Algiers, and many other parts of the Mediterranean littoral, not to speak of Australia, the Cape colony, parts of America, and many other places, can show as good "cures" as can any mountain station. Our own English health resorts are, also, by no means without similar records—a fact which, it seems to me, is in some danger of being too much overlooked in the present day. The most that can be said in favour of any health resort is, that a majority of the consumptives who frequent it benefit in health as a consequence, and that in many cases the downward course of the disease is retarded. But I submit that we have no proof that permanent cure of lung tubercle is ever wholly owing to climate influence. A large majority of those who are affected with lung tubercle die of that disease whether they go to health resorts or not; and I do not know that it would be very wide of the truth to say that many of those who go abroad, in the hope of being cured, would do quite as well at home, where they would be amongst friends who would take care of them, and where they would be spared the pain of separation from the home life and all its comforts. In saying this I am not forgetful of what has been said about the importance of carefully selecting cases before recommending to them residence abroad.

It is a fact which I know could, if necessary, be vouched for by several of my colleagues in this hospital, that apparent recovery from lung tubercle is not unknown in our practice here; and that the cases are not few where years have passed between the first appearance here of the consumptive and the last time that he was seen at the hospital. And we must not forget that the great majority of the people who consult us here are poor, many of them very poor indeed. Change of climate is out of the question for the bulk of these poor people, and many of them live and die in this East-end of London without ever having journeyed so far west as St. Paul's Cathedral. I have often spoken to men and women in this hospital who had never seen Cheapside, had no notion where the Houses of Parliament are, and had not visited, and did not care to visit, Hyde-park. When we know that

amongst a class of people so circumstanced and living, in too many instances, amongst most insanitary surroundings, recoveries from lung tubercle are, though rare, not so very rare, we must admit that that disease is sometimes apparently cured without the help of a change of air and climate, and without even the advantages of a residence in ordinarily healthy houses.

If, again, we turn to the drug treatment of lung tubercle we find that we can never say to any patient, "Take this, and you will surely find that your health will improve." Good results in abundance can be quoted as having followed the use of, for instance, cod-liver oil in lung tubercle; but equally good results could be quoted, I believe, where soda and gentian had been the only drugs prescribed. And I have no doubt, judging from the results of my own observations, that precisely the same remark may truly be made concerning the use of arsenic, the hypophosphites, and numerous other drugs which have had ascribed to them much success in the treatment of lung tubercle. It is true that in certain cases improved health results after the use of drugs, but that is not known till after the event; and we cannot foretell with certainty that the use of any drug will of necessity be followed by improvement in the health of any consumptive.

It was only about twenty-seven months ago that our knowledge of the cause of tubercular disease received its greatest addition from the genius of a man of whom the whole profession of medicine in every country has good reason to be proud. No sooner did Dr. Robert Koch discover that tubercular disease is due to a living organism than he set to work to search for a remedy for that disease—the most fatal of all the diseases which affect civilised man. Koch did not seek the remedy at the bedside of the consumptive, for he believes that, if such a remedy exists, it will be found in the outcome of experiments conducted in the laboratory and tested at the bedside. He and his assistants were able freely to conduct these experiments, for the great German nation have not yet learned to regard human interests as standing upon a lower level than those of the lower animals.

I propose now to lay before you, as shortly as I can, the results of practical importance which those experiments have established in connexion with our present purpose. I shall quote observations made by Drs. Ernst Schüll and Bernhard Fischer, in the Imperial Health Office in Berlin, whose chief is Dr. Koch. The object that these two gentlemen had in view was the ascertaining of how perfectly to disinfect the excreta of tuberculous patients. With the details of the elaborately exact series of experiments carried out by these observers for that purpose I need not now trouble you. In the end they established these two important facts, amongst others:—1. That a 5 per cent. solution of carbolic acid in water, mixed with an equal bulk of fresh sputum containing a large number of tubercle bacilli, in twenty-four hours destroyed the virulent properties of the sputum. 2. That ten parts of a saturated solution of anilin in water, freshly prepared, mixed with one part of fresh sputum containing a large number of tubercle bacilli, completely sterilised the sputum in twenty-four hours. Drs. Schüll and Fischer established these facts by injecting some of the fresh sputum, before its disinfection, into the bodies of animals, and found that tubercular disease was invariably developed as a consequence in the lungs, liver, and spleen; whereas after disinfection of the sputum in the way just indicated, no tubercular disease followed its injection into the bodies of animals. Besides carbolic acid and anilin, several other substances were experimented with by Drs. Schüll and Fischer, and amongst them were some which proved more or less efficient in destroying the virulence of tuberculous sputa. Of these, absolute alcohol gave the best results, for it was found that by mixing one part of the infected sputum with ten parts of absolute alcohol, sterilisation of the sputa was secured. Corrosive sublimate did not yield satisfactory results, for it was found that the animals experimented upon with this substance died of sublimate poisoning when they were subjected to an injection of equal parts of a mixture of tuberculous sputa and a 1 in 500 solution of perchloride of mercury. So far as our present knowledge helps us we can only use carbolic acid and anilin in a treatment of lung tubercle founded upon these experiments. The choice of a way of using carbolic acid is limited. I selected inhalation of carbolic acid vapour as the method of administration; and one of my smaller wards in this hospital has been converted into an inhalation room. In constructing a chamber for inhalation purposes the simplest contrivance has been employed. The window is partly, and the fireplace completely, covered with a screen of coarse cloth in the shape of a roller-towel. These screens dip into a trough, and so are kept constantly wet with a saturated solution of the ordinary commercial variety of carbolic acid. Near the centre of the ward is a gas stove with a shallow basin upon it containing a quantity of Calvert's No. 4 carbolic acid.

I shall now read to you an account of an examination of the atmosphere of the inhalation room, most kindly made for me by my friend Mr. Gerrard Ansdell, of the Royal Institution.

REPORT ON THE ESTIMATION OF CARBOLIC ACID VAPOUR IN WARD ROOM AIR.

BY GERRARD ANSDELL,

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"At the request of Dr. George Heron of the City of London Hospital, I have made a few experiments with a view to estimating the amount of carbolic acid vapour actually existing in the atmosphere of a ward set apart by him for consumptive patients. As very little work seems to have been done by any chemists in this direction, I was at first rather in the dark as to how to proceed; for, owing to the extremely small quantity present in the air, and its complicated nature, it would be impossible to estimate it directly. It was therefore thought advisable to collect it in some solvent, if possible, and then estimate the amount in solution. For this purpose a large glass vessel holding about twelve litres was connected from an opening at the top with two small wash-bottles, each containing one ounce of pure distilled water. The vessel was then completely filled with water, which was slowly drawn off through an aperture at the bottom, so as to make the air of the ward slowly bubble through the distilled water. By noting the number of times the vessel was refilled during the experiment, the volume of air drawn through the apparatus was of course at once known. So efficient was this method of collecting the carbolic acid, that the second wash-bottle in each experiment was found to contain only the merest trace of the acid, thus proving that none had escaped solution. The ward was fumigated by allowing Calvert's No. 4 acid to slowly evaporate from a vessel in the centre of the room, cloths saturated with a weaker solution of the acid being also hung up before the window and fireplace, so as to impregnate the air entering in this way and ensure uniformity in the composition of the air. The apparatus was placed about nine feet from the vessel in which the carbolic acid was evaporated, and the tube through which the air was sucked was turned away from it and towards a window, so that the air drawn through was no doubt a fair sample of that existing in the room. The ward contained in all 4008·51 cubic feet, and its mean temperature during the experiment was about 80° F. In estimating the quantity of carbolic acid in solution, after trying various methods, I finally took advantage of the extremely delicate reaction which takes place between this body and bromine water, the latter forming a light yellow flocculent precipitate of tribromophenic acid ($C_6H_3Br_3O$) when added in excess to a dilute solution of the acid. This precipitate, which is quite insoluble in water, was collected on a small weighed filter, washed, dried at a little below 100° C., and weighed. This gave the actual weight of carbolic acid (C_6H_6O) present in the volume of air experimented on, but as it really existed in the form of vapour, the volume of carbolic acid vapour corresponding to the weight obtained was calculated from the known vapour density of the body. This volume was then corrected for the temperature of the room, and from this the percentage quantity existing in the air was easily found.

The following are the results of the two experiments made:—

Vapour Density of Carbolic Acid (calculated) = 2·909 grammes,
Weight of 1 Litre of Carbolic Acid Vapour at 0° C. (calculated) = 4·209 grammes.

Experiment 1.—The vessel was nine times refilled with water, which is equal to 3·81 cubic feet of air drawn through the apparatus. The experiment lasted about twelve hours. Total weight of carbolic acid contained = 0·1016 grain. Total weight in the whole ward = 106·925 grains. Volume of carbolic acid vapour at 80° F. corresponding to the weight of acid found = 1·645 c.c., or 0·083 cub. inch. Total volume of vapour in the ward air = 87·3 cubic inches. Percentage

amount of carbolic acid vapour in the air rather more than 1-1000th of 1 per cent.

Experiment 2.—The vessel was sixteen times refilled with water, which is equal to 6·7 cubic feet of air drawn through the apparatus. Duration of experiment not mentioned. Weight of carbolic acid obtained = 0·1336 grain. Total weight in whole ward room air = 82·02 grains. Volume of carbolic acid vapour at 80° F., corresponding to the weight of acid found, 2·13 c.c., or 0·141 cubic inch. Total volume of vapour in ward air = 84·7 cubic inches. Percentage amount of carbolic acid vapour in the air = not quite 1-1000th of 1 per cent.

These two experiments, which were made with an interval of about a week between them, seem to show that the ward-room air maintains a fairly constant composition at a definite temperature, but, owing to the difficulty of dealing with such a very small quantity of vapour, they must only be taken as of tentative value, for many more experiments would have to be made under varying conditions of temperature &c., before any definite conclusion could be arrived at."[1]

We know very well, from the results of cultivation experiments, that the bacillus of tubercle increases in number with considerable rapidity out of the body, though its exact rate of multiplication is not yet known. We know also, from our observations at the bedside of the consumptive, that the organism forms new colonies with distressing perseverance after it has made its first lodgment in the human lung. When we remember that a mature bacillus contains from two to six spores, and that probably each one of these spores will in its turn become a full-blown organism, and the parent of a numerous progeny; and when, in addition to all that, we call to mind how difficult, and how rarely successful, is any attempt thoroughly to disinfect, or, in Listerian phrase, to "make sweet" a moderately deep wound to which there is easy access from the surface of the body—we can form some estimate of the extreme difficulties that lie before us in our attempts to destroy the growth of the bacillus of tubercle within the lung.

One thing seems clear to me, and that is the absolute necessity of submitting patients night and day, without any intermission, to the action of the vapour of carbolic acid, if we wish to test thoroughly its action in cases of lung tubercle. It must be obvious to everyone, after studying the experiments of Schüll and Fischer, and reading Mr. Ansdell's report, that nothing short of strict confinement to the inhalation room by night and by day and for a long period can be of real use in materially impeding the growth of the bacillus in the lungs. It is upon that condition being distinctly accepted by patients that admissions to the inhalation room upstairs are granted. Of course certain short absences from the ward must be allowed, the lavatories being at some little distance from it. During even these short absences the patients are required to wear a respirator, through which they inspire air charged with carbolic acid vapour. Now, I beg you not to misunderstand me in this matter of the respirator. It is with no object of filtering the air or raising its temperature that I have advised the use of the respirator. The sole object that I have in view is to impress upon the patient's mind that he must keep up the supply of carbolic acid vapour without a moment's intermission. Perhaps I may as well now tell you that no case of carbolism has occurred amongst the patients in the ward, and it has been used as an inhalation room since last January. It is almost superfluous to state that the patients' urine has been carefully watched from day to day.

I much regret that the patients who have passed through the inhalation room are too few in number to warrant any special reference to them at present. Those of you who are interested in their clinical history are welcome to go into the ward and see and examine the cases. A journal containing a detailed report of all the cases hitherto submitted to treatment there, by inhalation, is on the ward table, and is, of course, open to your inspection. You can therefore, as practitioners of medicine accustomed to the study of disease, form your own opinions concerning these cases. For my own part, I will only say that I find in the record of these cases sufficient encouragement to pursue still further this line of treatment; and as I, in common with all my colleagues here, was asked to contribute to the course of lectures now being given at this hospital, I thought this subject worthy of your notice, and therefore selected it for consideration to-day, for I cannot shut out from my mind the hope that the road to success in treating consumption, should we ever find it, may be found to lead in the direction which seems to be indicated by Koch's researches.

[1] From the above data it follows that patients in the inhalation room pass seven cubic feet of carbolic acid vapour through their lungs in twenty-four hours.—G. A. HERON.

Clinical Lecture

ON THE

LOCALISATION OF A CEREBRAL CLOT.

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GENTLEMEN,—You have all noticed what a large number of patients we have to treat suffering from hemiplegia owing to cerebral hæmorrhage. Sometimes we find the arm, the leg, and the face paralysed on one side; at other times the arm and leg of one side are affected and the side of the face of the other; in some cases we have aphasia with right hemiplegia; and thus we meet with an endless variety of paralyses and cross paralyses. Some of you have told me that you have found great difficulty in understanding the subject of localisation of cerebral hæmorrhage, so I shall embrace this opportunity, as you have recently seen a large number of these cases, and as your attention has been drawn to them, of saying a few words on the subject, and of endeavouring to make the matter plain to you. I shall not weary you by relating a number of examples, but shall at once proceed to the subject under consideration.

I may remind you that hæmorrhage takes place more frequently into the corpus striatum and optic thalamus on either side than into any other part of the brain. As these are parts of prime importance, receiving fibres which converge here from all parts of the brain, the effect of pressure is very serious. When hæmorrhage takes place into the corpus striatum the arm and leg are generally paralysed. The arm is always (if there be any difference) the more paralysed, and is longer in recovering its healthy state. On the same side as the paralysis of the arm and leg there is also generally a similar affection of the muscles of the face; but the loss of power is not so complete as it is in the extremities. Some say that if the hæmorrhage is great there is partial paralysis of the muscles of the chest and abdomen. Some deny that the muscles of the chest are affected. Dr. Todd says, "it must be an extensive lesion which will paralyse the intercostal and abdominal muscles." The greater the hæmorrhage the more extensive are the symptoms; and it is only in extreme cases that the head and eyes are affected, and even then they are the first to recover. The head seems to be turned to the side corresponding to the seat of the clot, owing, of course, to the paralysis of the muscles of the other side. Both eyes also are turned in the same direction; there is not any squint, but both eyes seem to be turned to one side and slightly upwards. The branches of the middle cerebral artery, which pass up from it through the anterior perforated plate, are those which rupture. Sensation is unaffected in the paralysed parts. The upper part of the arm and leg regains power before the lower part, before the hand and foot. The symptoms vary much according to the part of the corpus striatum affected; but I shall refer to this another time.

Slight hæmorrhages may occur on the most superficial or ventricular surface of the optic thalamus without giving rise to any appreciable symptoms, and it is difficult or almost impossible to say what are the direct symptoms produced by hæmorrhage into the optic thalamus alone, as such hæmorrhage hardly ever occurs. The arterial supply of the corpus striatum and optic thalamus are so intimately connected that hæmorrhage into the one extends more or less into the other, or if it do not extend it exercises pressure. When there is hæmorrhage into the optic thalamus there is anæsthesia more or less on the side opposite to the lesion, with sometimes tonic or clonic spasms of the same parts. There is also invariably paralysis of the opposite side, which no doubt is due to pressure on the corpus striatum. It has been noticed that when hemiplegia is present from hæmorrhage into the corpus striatum, the more posterior the

hæmorrhage, or, in other words, the nearer it is to the optic thalamus, the greater the amount of anæsthesia.

Small clots have frequently been met with in the cerebrum which have not produced any symptoms during life, as indeed post-mortem evidence of disease of the cerebrum has been met with where no evident symptoms during life have pointed to such. If the hæmorrhage be great, apoplectic symptoms are present, followed by paralysis; but that is no doubt more dependent on pressure on the subjacent ganglia—i.e., the corpora striata or optic thalami—than on injury to the cerebrum itself. It is astonishing how the brain can tolerate the presence of a small clot, or non-extensive disease, without giving rise to any very evident symptoms during life.

Hæmorrhage into the lateral ventricle is accompanied by coma, steadily increasing. It often occurs in this way. Effusion first takes place into the corpus striatum or optic thalamus, as evinced by hemiplegic symptoms. After a time the bleeding begins again, and then we have ventricular hæmorrhage with its coma, and the coma is frequently preceded by convulsions, which occur at the moment the hæmorrhage takes place.

Hæmorrhage into the under surface of the crus cerebri gives rise to paralysis of motion on the opposite side. Hæmorrhage into the upper surface causes loss of sensation on the side opposite to the lesion. But if the back and inner part is pressed upon, we have not only the hemiplegia, but also paralysis of the muscles supplied by the third nerve on the same side as the lesion—not on the same side as the hemiplegia, because the nerve is pressed upon here before it has entered the brain. These paralyses can only be said to depend on a clot when they commence at the same time; for if they do not, the paralyses may be dependent on other causes, as syphilis.

Lesions in the pons are somewhat more difficult to understand than those I have just described to you, and the symptoms present during life vary according to the position of the clot. For instance, a clot in the upper part of the pons on one side will give rise to paralysis of the face, arm, and leg of the other side; whereas a clot in the lower part of the pons on one side will occasion paralysis of the arm and leg of the side opposite to the lesion, and of the face on the same side as the lesion. The fibres of the portia dura, which enter the pons at its posterior margin between the middle and inferior peduncles, decussate about the middle of the pons as they are passing on to the opposite hemisphere. Keeping this in mind, we can quite understand that a small clot in the lower half of the pons will, because it presses upon the portia dura nerve before it has decussated, of course produce paralysis of the muscles of the face on the same side as the clot, and, because it presses on fibres passing up from the opposite side of the body, which have decussated at the lower part of the medulla oblongata, will produce paralysis of the opposite leg and arm. A clot in the upper part of the pons on one side will produce paralysis of the face, arm, and leg on the opposite side, because all fibres here have decussated—those from the arm and the leg in the medulla oblongata, and those from the face in the pons. We may also find that the fifth nerve is implicated in the same way as the portia dura of the seventh, so that we have not only paralysis of one side of the face, but also anæsthesia, with paralysis of the temporal and masseter muscles. Often, too, there is paralysis of the sixth nerve on the same side; so that there is, in addition to the symptoms already mentioned, an internal squint. Of course, a clot about the middle of the pons on one side may involve fibres which have and fibres which have not decussated, and thus we may find paralysis of both sides of the face. In fact, there are many combinations of paralysis met with, such as paralysis of both sides of the face, of one side of the face and both sides of the body, both sides of the face and one side of the body, the paralysis depending upon the amount and locality of the clot. When the hæmorrhage is very extensive, there is general paralysis of the arms, legs, and all the muscles of the body, with frequently a contracted state of both pupils. This is a state which has often been mistaken for poisoning by opium.

Hæmorrhage into the medulla oblongata is generally fatal, and death is usually instantaneous. It hardly ever gives rise to any symptoms of a chronic character. When there is disease of the medulla oblongata, there is paralysis more or less of the tongue, palate, lips, and vocal cords; but you will remember that extensive hæmorrhage is rapidly fatal.

There are not any distinct symptoms accompanying cerebellar hæmorrhage. There may be hemiplegia or hemianæsthesia on the side of the lesion or on the opposite side; but of course these symptoms are not peculiar to this hæmorrhage. They are probably caused by indirect pressure upon the motor tracts below. Brown-Séquard says that in cerebellar hæmorrhage there is neither facial nor lingual palsy; and severe vomiting or severe pain at the back of the head would point to the cerebellum as being the seat of disease, as they so frequently are present in other diseases of the cerebellum.

ON THE

IMPORTANCE OF ISOLATING SLIGHT AND DOUBTFUL CASES OF SCARLET FEVER.[1]

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I SHALL take it for granted that we are all pretty well of one mind as to the desirability of imposing some artificial check upon the spread of scarlet fever. Most of us, at any rate, are accustomed to regard epidemics as increasing in intensity as they extend. All of us will certainly admit that children of the school-going age are more obnoxious to the infection of scarlet fever than grown-up persons. Very few would hesitate to separate a child with sore-throat, strawberry tongue, red rash, and a temperature of 104° F., from his playmates, and to keep him away till desquamation had ceased. In doing so, we should for the first few days have the cordial coöperation of his parents, and although the coöperation might be less readily granted during the later stages of convalescence, and his friends might not altogether see why the little fellow, well wrapped up, should not be sent in a comfortable first-class compartment to a health resort, when the change would do him so much good, still, when our care has resulted in the escape of the rest of the family from the disease, we shall perhaps have a certain amount even of gratitude from the powers that be. Different is it, however, when we hesitate at all as to the nature of the case. The British parent cannot live in an atmosphere of doubt. The case certainly either is or is not one of scarlet fever; and if we cannot say positively that it is, he concludes, and acts upon the conclusion, that it is not. The object of the present paper is to strengthen the hands of my professional brethren in dealing with impatient parents. I propose, therefore, briefly to narrate three instances which have lately come to my knowledge in which, as it seems to me, there were strong reasons to think that certain doubtful cases of the disease had formed foci of contagion. In each instance my information came in the first place from medical men; in all three cases the delay in giving information was not on the part of the practitioner, but was, I believe, due to the ignorance of the parents as to the real nature of the ailment.

The case I propose to relate first was that of a middle-class day school for girls. One of two sisters attending this school was subject to slight feverish attacks; these had been so frequent and so trifling that her parents had given up sending for their medical man on account of them, and were in the habit of treating her themselves. Her sister slept with her, and continued going backwards and forwards to school during an illness apparently of the usual character. One of the girls in the same class took ill of scarlet fever, and the medical man attending her being also called in to see the girl first mentioned, and who had not made as quick a recovery as usual, found the latter covered by a fine desquamation. He very prudently at once ordered her sister to remain away from school, the schoolroom was disinfected, and fortunately no further case occurred. Had the girl whose sister was attending school recovered rather more quickly, no medical man would most likely have been sent for, and probably one or two other cases would have occurred before a clue to the cause of the outbreak had been obtained.

The next instance I shall give has been already referred to in my report to the sanitary committee of the Corporation

[1] Read before the annual meeting of the Yorkshire Branch of the British Medical Association, held at Huddersfield, June 25th, 1884.

for 1883 (p. 14). The cases occurred in children attending the same class in one of our large board schools. Two children, living in houses half a mile apart, were reported ill of scarlet fever, and a few days later one case more occurred in each house. On visiting the school I examined every member of the class to which these children belonged, and obtained from their teacher the names of those members of the class who were or had lately been away from school. One child was actually present in the class-room with a sore-throat, a tongue covered with bead-like papillæ, and free desquamation from the neck. At my request she was sent home, where I saw her again, and whence I sent her, and, a few days later, her younger sister, to the fever hospital. Her ailment had been so slight that she was, I believe, kept away from school only one day on account of it. The commencement of her attack corresponded in time with that of the two cases already mentioned, so that it was necessary to carry the search for the common cause of these cases, one of which proved fatal, yet further back. I will put down the dates of these three cases:—B. B——, the girl last named, aged seven years, sore-throat and retching on Saturday, the 20th, and rash on Sunday. A. M——, aged nine years and nine months, throat dry on Sunday, the 21st; at school on Monday. S. A. H——, aged nine years, at school on Monday, the 22nd; sickly on Tuesday; rash on Wednesday. Leaving out cases which manifested themselves later in other members of the same family and other members of the class, I pass on to what was, I think, the case really infecting those already mentioned.

E. A. C——, a girl, aged eight, had complained of feeling "starved" (which in Yorkshire means a slight rigor), and on Oct. 9th, 1883, as nearly as her mother could remember, she developed a slight rash upon her chest. Her mother seemed to think she had kept her at home on the day of the rash, and it may have been so; but in that case she must have given me the wrong date, for on referring to the school register, I found that she had attended on that day.[2] When I examined her on Oct. 30th she still had the smooth-based, rather red tongue, covered with rounded papillæ of the same colour, like small beads studded on its surface, that one so frequently finds in children who are recovering from scarlet fever. The girl was of course kept away from school, as were also a few other children about whose condition there was some doubt, principally because they had slight sore-throat; and, as far as I can remember, no new case has occurred at that school up to the present time. I feel no moral doubt that this girl was the efficient cause of the disease in her class-mates. Her illness was, however, so slight that even had she been seen by a medical man at the time the case would probably have been regarded as doubtful—too doubtful, very likely, to send into hospital. And yet, as I have said, I cannot doubt that this slight case was the immediate cause of several others, one of which proved fatal.

The remaining instance was even more painful. The first cases heard of were two children in whom there was said to have been no rash, and death was ascribed to nephritis and dropsy. The medical man called in to certify the cause of death kindly drew my attention to the matter, and going with him to inspect the house on Jan. 20th last, we sent two other members of the family to the fever hospital, and within a few days four others followed from houses only a few yards distant in the families of their intimates. A month later I was called to a dirty little "yard," a stone's throw from the house in which the children had died of nephritis. Here I found four new cases of scarlet fever (two of them proved fatal within a few hours) and three convalescents. The illness in the latter dated, in two out of the three cases, four weeks back, and had been so trifling that the children ran about the whole time, thereby in all likelihood infecting the four others. No medical man had been called in, not unnaturally, for the children could not be said to be ill. The history of the exposure of these children to the infection in the house where the dropsy cases occurred was clear enough. The two families were on very intimate terms, and constantly visited each other's houses. The three convalescents and three of the four new cases were sent to hospital, the seventh was too ill to be removed. The mother of some children already mentioned as having been taken to hospital had also an attack of nephritis, probably scarlatinal, and was taken into hospital at her own request. Counting her case, but omitting four other clear cases of scarlet fever occurring during the next few weeks within a radius of a quarter of a mile, in which I was, however, unable to trace direct contact with any of the infected persons, may we not conclude that had the first two cases been isolated at once the other fourteen would probably have escaped, and two deaths less would have been registered as from this disease? I should be inclined to seek the cause of the four other cases in infection from those I have mentioned, for (1) no cases had been heard of in that part of the town for some months, and (2) some of them were, I believe, attending the school to which the two children who had scarlet fever without being ill were going until I stopped them. Still, as the evidence was less clear in these cases, we may leave them out. About the other fourteen, the evidence as to the contagion was as clear as it could be, and the cases to which we traced it were not recognised at all as cases of scarlet fever.

These three instances, I think, help to strengthen the evidence as to the infectiousness of slight cases of scarlet fever; of cases so slight or so doubtful as to be difficult to recognise. I think every medical man will agree with me that in view of such cases as the foregoing, and of similar ones which will rise to the mind of every one, it is of the highest importance to isolate slight and even doubtful or suspected cases of this deadly malady.

[2] She was absent, however, according to the register, on the 5th, 12th, 17th, 22nd, and 26th of October, and the last ten or twelve days of September. In the report referred to I find I have called her a girl of twelve. This was done from memory. She was a big, well-grown girl, and looked as old as that, but I find I had put her down in my note-book at the time as eight years of age.

CASE OF

RESUSCITATION AND RECOVERY AFTER APPARENT DEATH BY HANGING.

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THE following case, from its hopelessness at the outset, yet ultimate recovery under the duly recognised forms of treatment, is of such interest as to demand publicity, and will afford encouragement to others in moments of doubt.

M. A. S——, aged fifty-three, was admitted into the Kent Lunatic Asylum at Chartham on Oct. 3rd, 1882, suffering from melancholia, the duration of which was stated to have been three months. She had several times attempted suicide by drowning and strangulation. She was on admission ordered a mixture containing morphia and ether thrice daily, to allay her distress. On Oct. 10th she attempted suicide by tying a stocking, which she had secreted about her person, round her neck. Shortly afterwards, with similar intent, she threw herself downstairs. On Jan. 4th, 1883, she attempted to strangle herself with her apron. On the 30th of November following, at 4 P.M., she evaded the attendants, and made her way to the bath-room of No. 1 ward, the door of which had been left unfastened by an attendant. She then suspended herself from a ladder there by means of portions of her dress and underclothing tied together. A patient of No. 1 ward discovered her suspended from the ladder eight minutes after she had last seen her in the adjoining watercloset, and gave the alarm.

The woman was quickly cut down, and the medical officers summoned. In the interval cold affusion was resorted to by the attendant in charge, but the patient was to all appearances dead. The junior assistant medical officer, Mr. J. Reynolds Salter, M.B. Lond., arrived after about three minutes, and at once resorted to artificial respiration by the Silvester method. A minute or so later the medical superintendent and myself joined him. At this time the condition of the patient was as follows. The face presented the appearance known as facies hippocratica; the eyeballs were prominent, the cornea glassy, the pupils widely dilated, not acting to light, and there was no reflex action of the conjunctivæ; the lips were livid, the tongue tumefied, but pallid, the skin ashy pale, the cutaneous tissues apparently devoid of elasticity. There was an oblique depressed mark on the neck, more evident on the left side; the small veins and capillaries of the surface of the body were turgid with coagulating blood; the surface temperature was extremely low. She was pulseless at the wrists and temples. There was no definite beat of the heart recognisable by the stethoscope. There was absolute cessa-

tion of all natural respiratory efforts, complete unconsciousness, total abolition of reflex action and motion, and galvanism with the ordinary magneto-electric machine failed to induce muscular contractions. The urine and fæces had been passed involuntarily during or immediately subsequent to the act of suspension. As the stethoscope revealed that but a small amount of air entered the lungs with each artificial inspiration, the tongue was at once drawn well forwards, and retained in that position by an assistant, with the result that air then penetrated to the smaller bronchi. Inspiration and expiration were artificially imitated about ten times to the minute. In performing expiration the chest was thoroughly compressed. The lower extremities were raised, and manual centripetal frictions freely applied. In the intervals of these applications warmth to the extremities was resorted to. About ten minutes from the commencement of artificial respiration we noticed a single weak spasmodic contraction of the diaphragm, the feeblest possible effort at natural respiration. Simultaneously, very distant weak reduplicated cardiac pulsations, numbering about 150 to the minute, became evident to the stethoscope. The reduplication implied that the two sides of the heart were not acting synchronously, owing to obstruction to the pulmonary circulation induced by the asphyxiated state. Artificial respiration was steadily maintained, and during the next half hour spasmodic contractions of the diaphragm occurred at gradually diminishing intervals, from once in three minutes to three or four times a minute. These natural efforts were artificially aided as far as possible. At 5.45 P.M. natural respiration was fairly, though insufficiently established, the skin began to lose its deadly hue, and titillation of the fauces caused weak reflex contractions. Flagellation with wet towels was now freely resorted to, and immediately the natural efforts at respiration were increased to twice their previous number. The administration of a little brandy-and-water by the mouth failed, as the liquid entered the larynx. Ammonia was applied to the nostrils, and the surface temperature was increased by warm applications and clothing. At 6 P.M. artificial respiration was no longer necessary. The heart sounds then numbered 140 to the minute, the right and left heart still acting separately. A very small radial pulse could also be felt. At 6.45 P.M. the woman was put to bed, warmth of surface maintained, and hot coffee and beef-tea given in small quantities. Great restlessness and jactitation set in with the renewal of the circulation in the extremities. An enema of two ounces of strong beef-tea was administered at 10 P.M. The amount of organic effluvium thrown off by the lungs on the re-establishment of respiration was very great and tainted the atmosphere of the room and adjoining ward. The pupils, previously widely dilated, began to contract to light at 11 P.M. Imperfect consciousness returned at 5 A.M. the following day (Dec. 1st), and about an hour later she vomited the contents of the stomach (bread &c. taken on Nov. 30th). Small quantities of beef-tea were given by the mouth during the night. At 9 A.M. air entered the lungs freely, and there were no symptoms of pulmonary engorgement beyond slight basic hypostasis; the pulse remained at 140 and the heart sounds reduplicated; she was semi-conscious, very drowsy; in a state of mental torpor, with confused ideas when roused, and she complained of rheumatic-like pains all over her. The temperature was 100·2°; the facial expression more natural; the tongue remained somewhat swollen and sore; she was no longer restless; she took tea, beef-tea, milk, &c., well; the functions of the secreting organs were being restored; she perspired freely; had micturated; the mucous membrane of the mouth was moist, and there was a tendency to tears without corresponding mental depression. The patient was ordered a mixture of ether and digitalis every four hours. On December 2nd the pulse was 136, and the heart sounds reduplicated. The following day she was given bromide of potassium in place of the ether in the digitalis mixture. On the 4th the pulse was 126; reduplication gone. On the 6th the pulse was 82, and the temperature fell with the pulse rate. She was well enough to get into the ward for a few hours. Her memory, especially for recent events, was at that time greatly impaired. On the 12th she still complained of muscular pains like those of rheumatism. Apart from that she was enjoying good bodily health.

A curious fact in connexion with this case is that since this attempt at suicide she has steadily improved mentally, has lost her delusions, is cheerful, and employs herself usefully with her needle. She converses rationally, and tells me she recollects the impulse by which she was led to hang herself, and remembers the act of suspension; but from that time her memory is a blank, until two days subsequently, when her husband came to see her, and when she expressed great grief at having been guilty of such a deed. Her bodily health is now (June 30th, 1884) more robust than formerly, and she is on the road to mental convalescence.

Remarks.—The successful issue of this case leads me to draw the following inferences:—1. That in cases of suspended animation similar to the above there is no symptom by which apparent can be distinguished from real death. 2. That in artificial respiration alone do we possess the means of restoring animation when life is apparently extinct from asphyxia, and that, with the tongue drawn well forwards and retained there by the hand or an elastic band, the Silvester method is complete and effective. 3. That artificial respiration may be necessary for two hours or more before the restoration of adequate natural efforts, and that the performance of the movements ten times to the minute is amply sufficient, and produces a better result than a more rapid rate. 4. That galvanism, ammonia to the nostrils, cold affusion, and stimulants by the mouth, are practically useless in the early stage. 5. That on the re-establishment of the reflex function we possess a powerful auxiliary agent in flagellation with wet towels &c. 6. That centripetal surface frictions and the restoration of the body temperature by warm applications aid recovery. 7. That the heart, if free from organic disease, has great power of overcoming the distension of its right cavities and the obstruction to the pulmonary circulation, although its action may for a time be seriously deranged, as evidenced by reduplication of its sounds. 8. That when the heart's action remains excessively feeble, and the right and left heart fail to contract synchronously, it would be justifiable to open the external jugular vein. 9. That during recovery the lungs are heavily taxed in purifying the vitiated blood, as shown by the excessive amount of organic impurities exhaled. 10. That restlessness and jactitation accompany the restoration of nerve function, and that vomiting occurs with returning consciousness. 11. That pains like those of rheumatism are complained of for some days subsequently, these probably resulting from the sudden arrest of nutrition in the muscles.

Chartham, near Canterbury.

THE PREVENTION OF DENTAL CARIES.[1]

BY HENRY SEWILL, M.R.C.S., L.D.S.

SUMMING up the knowledge which we possess as to the etiology and pathology of caries in the papers which I have recently contributed to the Journal of the British Dental Association, I found that there exists much more than enough of fact—anatomical, physiological, pathological, and experimental—to establish incontrovertibly the following truths with regard to caries.

Caries is a process of disintegration, commencing invariably at the surface, proceeding inwards, and due entirely to external agents; enamel and dentine are perfectly passive under this process, and manifest neither pathological action nor vital reaction of any kind. The predisposing causes of caries are, first, innate structural defects in the teeth, which render them more susceptible to the action of agents; secondly, all such diseases as are accompanied by vitiation of the oral secretions, or which tend to the formation or deposit of acid and the accumulation of products of decomposition within the mouth; and, thirdly, crowding and irregularity of the teeth, due to smallness and malformation of the maxillæ. The direct agents in initiating caries are acids, the products of chemical change and fermentation set up in fragments of organic matter which are commonly present in the mouth and lodged about the teeth. These acids are often assisted in their action by acid mucus secreted by unhealthy gums, acid saliva in some diseases, and acid eructated from the stomach in others.

For any useful discussion of my present subject it is necessary to state at the outset the fundamental facts upon which reliance is placed. Enamel is the starting-place of caries, and with this tissue we are mainly concerned in studying the etiology of the disease. Enamel is a densely hard,

[1] Abstract of a paper read at the meeting of the British Dental Association at Edinburgh, Aug. 29th.

almost homogeneous calcareous mass, containing not more than from 1 to 5 per cent. of organic matter. The enamel organ—that portion of a developing tooth from which enamel is formed—consists of epithelial cells, and it retains its epithelial nature throughout the process of calcification. The completed tissue results from direct calcification of the internal layer of cells. Vascular papillæ arising from the contiguous tissue of the dental sac penetrate to a slight depth the external layer of cells and convey nutriment to the developing tissue. On completion of the enamel these external cells with the vascular loops undergo atrophy and disappear. Dentine consists of a homogeneous calcareous matrix with a basis of fibrous tissue, about 28 per cent. of the mass. It is permeated by minute tubes, occupied by fibrils which endow the tissue with sensibility, and which form the sole protoplasmic element in dentine. The bearing of these anatomical and physiological considerations upon my subject depends upon the obvious fact that enamel is totally devoid of any physiological mechanism whereby either vital or pathological changes could be brought about in it, and that whatever changes enamel undergoes are induced by external agencies. Not only is enamel not capable of intrinsic changes, but it is not in relation with any mechanism capable of influencing it from within. To believe in the possibility of nutritive changes in enamel we must first conceive some means by which this calcareous mass, devoid of cellular elements and incapable of imbibition, could assimilate nutritive material when conveyed to it; and we must next imagine the conveyance of new and effete material to and from the vessels of the pulp through the odontoblast layer of the pulp by way of the dentinal fibrils to its destination within the substance of the enamel.

By the end of the twelfth week of intra-uterine life a cap of calcified material may be demonstrated on the pulps of all the temporary teeth. By the sixth month the first permanent molar has advanced to a similar stage of development. By the first month after birth the permanent incisors and canines are advanced to the same degree, and at the third year and twelfth year respectively calcification has commenced in the second molars and wisdom teeth. It is usual to assume that ill-made teeth result from deficient supply of the lime salts which go to build up the tissues. We do not really know whether this is ever actually the case or whether the defect arises always or sometimes from other causes affecting the tooth germ, whereby it is prevented from undergoing the process of conversion; but be this as it may, we can perceive that it would be useless to attempt, directly or indirectly, by medical treatment to influence the formative process, to promote the production of enamel of good quality, after the lapse of the periods named in the different classes of teeth. The one dark spot in our knowledge of the remote causation of caries is found in the first predisposing cause which I have named: inherent structural weakness of the tissues. The dental tissues vary infinitely in strength in different individuals. We meet with well-made teeth, exceptionally it must be confessed, the sound enamel of which tries the steel of our best-tempered chisels; on the other hand, we encounter, and much more frequently, teeth the soundest enamel of which is throughout chalk-like in its softness. Between these extremes all varieties are to be found; and teeth of general defective character often present patches of surface, the enamel of which consists merely of an imperfectly united mass of granules. Similar defective spots are to be found here and there in teeth of better formation. Sometimes enamel fibres at parts are penetrated at their centres by minute tubes, thus making the tissue at such places porous. Defects in quantity are equally variable in extent. Honeycombed teeth have enamel full of small pits and fissures, and there is scarcely a set of teeth to be found in which, here and there, in one or more teeth, an isolated crack or cleft, a solution in the continuity of the tissue, does not exist.

Our knowledge, I repeat, of the origination of mal-development of the dental tissues is very incomplete. We know that vast numbers of individuals in highly civilised states have ill-made teeth; and we know that the quality of the dental tissues varies very much in the different peoples. To instance a few nations in this regard, and to speak somewhat from my own experience, I should place the Scotch as a people in the first rank of dental development, after them I would place the North Germans, thirdly the English, then the French, and lastly the people of the United States. Among the last, I of course only refer to that part of the population native by sufficiently long descent; those upon whom the climate and other forms of evolution have set their mark. There is evidence, although not conclusive, that in all races of advanced civilisation there has been, in later generations, a notable further deterioration in dental development. To account for these circumstances, we have very few solid facts. One at the outset may be recorded—namely, that comparative disuse of the organs of mastication has led in civilised races to decrease in size and strength of the whole apparatus of mastication—jaws, muscles, and teeth. This fact has been quite recently demonstrated by Professor Flower. He shows, as a result of examination and measurement of many thousands of skulls, that there is a gradual diminution in the size of the teeth, from the anthropoid apes, through the lower races of man, to the European. He has constructed a perfect dental index, in which the average size of the teeth of the gorilla being represented by 50·8 and the Tasmanian by 47·5, the European stands at 40·5. It has been plausibly argued that progressive dental deterioration may be accounted for by the overwhelming demands upon the vital powers by the growth of the brain and its increased exercise in modern life. The brain and the jaws are alike fed from the common carotid artery, and, it is urged, the demand for blood by the growing and working brain leads to imperfect supply of the masticatory organs. Again, dental deterioration has been ascribed entirely to improper and imperfect feeding of children, to insufficiency in the food of lime salts, the proper pabulum o the developing teeth. If this were true, the whole osseous system—which is built up of the same chemical constituents as the teeth—must in every case be equally ill-constructed; it would thus be impossible to find a single individual with a solid skeleton, and such cases as so commonly present themselves, a massive bony system in conjunction with faulty dental tissues, would be unknown. Perhaps with one exception there is no modern people displaying general progressive physical degeneration likely to be accompanied by ill-developed teeth. But it must be recollected that there has been among the populations a constant augmentation in the numbers of the physically imperfect. Vast numbers of the phthisical, the scrofulous, the rickety, and the congenitally syphilitic, who would formerly have perished in childhood, are now by science preserved alive, and these imperfect types are all associated with faulty dental development. Least of all among the nations can the people of these islands be suspected of general physical degeneration. On the one hand, no doubt, injury has been caused by the aggregation of great masses of the population in towns, the sanitation of which is imperfect, and in the employment of great numbers of men, women, and children in crowded, ill-ventilated factories. On the other hand, never before were the great bulk of the British so well sheltered, so well clad, and so well provided with food and the smaller luxuries of life; never before was the public health so well cared for, and never before was there more freedom from diseases which leave their mark on the constitution, and lead to degeneracy in the descendants of their victims.

In discussing questions of evolution we must be on our guard against hastily drawn generalisations, and must recollect that vast periods of time are needed to work permanent changes. Admitting that deterioration of the apparatus of mastication and of the dental tissues has advanced in the present and in recent generations, we are not therefore to believe that this decadence is to continue. So long as mastication is an advantage to the race in making the man a better animal, it is absurd to suppose that the forces of evolution will go in the end to produce a toothless man. And the nations are not interfering improperly with natural forces nor retrograding in physical development. To this, however, I believe there is one exception. The French, having adopted almost universally the practice of restricting population by artificial means, are preventing the action of those evolutionary forces, which, given fair play, ensure in the end the survival of the physically fittest as surely now in the nineteenth century as in the ages of primitive man. The French are carrying on what is really a gigantic system of artificial selection, and by ensuring the survival of the least fit progeny are producing a stunted inferior race. The physical deterioration of the French seems almost proved; but there is not evidence to show that their teeth are bad in proportion; and we must not forget a possible fallacy as regards the teeth. The French use their jaws less than any other nation; they are the best cooks in the world, and the whole population, without exception, lives upon the softest food, including bread of the most delicate manufacture. It

is puzzling to observe that the teeth of the French are better than those of the Americans, who cannot be accused justly of adopting extensively those vices of civilisation practised by the French. These observations and contradictory facts are intended to show that the cause of dental deterioration—inherent structural weakness of the tissues—is extremely complex. We do not know yet what are all the factors which can possibly go to produce the results which we note.

When we turn from the general consideration of this subject to the narrower question of the association of defective dental tissues with particular diatheses, we find ourselves on firmer ground, and we may take a solid fact to start with—the fact that hereditary syphilis, which seems to interfere with the development of all the structures derived from the epiblast, leads also in many cases to imperfect formation of the tooth tissues. The amount of injury to the developing teeth depends upon the stage of the disease in the affected parent. It is, of course, most common for the father to be the subject of the disease. A woman pregnant by a man suffering from secondary syphilis of recent date will usually either abort in the earlier months or bring forth a dead child about the full term. As the virulence of the disease in the parent abates under treatment or by lapse of time, the mother begins to bring forth living children; these may perish early or may survive in accordance with the extent to which their constitutions are modified by the syphilitic poison. It is a fact, I believe, that only secondary syphilis is transmissible, and thus so soon as that stage in the parents is passed, children, although often unhealthy, will not display signs of specific hereditary taint. In my experience the typical syphilitic tooth described by Mr. Hutchinson (and which must not be confounded with the merely honeycombed tooth), occurs only in children displaying the worst form of hereditary syphilis; but it by no means forms an invariable accompaniment to this condition. Indeed, I have been struck with the rareness of the malformation in children with unequivocal signs of syphilis. I reckon roughly I have not seen it in more than 1 per cent. of cases. I have observed, however, that in every child begotten of syphilitic parents, and even in those cases where no specific symptoms existed, the teeth, although often good in form and colour, have been of imperfect formation, the enamel soft and easily broken down. I have noticed, also, that the children's teeth were, as a rule, markedly inferior to those of the parents; and I am strongly of opinion that children begotten of syphilitic progenitors may often display inherently defective dental tissues as the sole sign of the attenuated taint. Considering that children of the third and fourth generations would inherit the dental characteristics of their parents, hereditary syphilis may be reasonably looked upon as one of the main causes of imperfect development of the dental tissues.

An intimate connexion between dental mal-development and any other diathesis besides the syphilitic cannot be fully demonstrated, yet there are some of these constitutional conditions with which badly made teeth seem more or less associated. My experience goes to show that imperfect dental tissues are found in the majority of cases of scrofula. I would say that ill-made teeth are not at all a constant accompaniment of any form of phthisis, nor are they especially noticeable in a majority of cases in patients of undoubted tubercular tendency. There is one class of patients, however, the subject of phthisis of tubercular origin which almost invariably presents faulty dental tissues. This is the type most frequently found in females, in which there is often, with a fragile form, considerable facial beauty, in which the eyes are large and expressive, the complexion fair, with the blue veins visible beneath the skin. This is the not uncommon type, in which I have invariably found the teeth, although well-shaped and beautiful to look at, covered with the softest enamel. With rickets I have generally found inherently defective teeth. I can in no way associate faulty tooth development either with the rheumatic or gouty constitution. Indeed, with the latter both teeth and jaws are often of unusually massive and solid character.

What general measures can be suggested likely to aid in the prevention of dental deterioration? We, with other reformers, can direct attention to the need of national sanitation in the broadest sense. Syphilis is an affair mainly of police, and will surely be extinguished in this nation when the people are sufficiently educated in science. Scrofula and rickets are mainly poor children's diseases, and are the direct products of filth, darkness, and starvation. The observance of the well-known general laws of health, we may be sure, will tend to produce good teeth in the race, if not in the individual, and among these laws we must insert one inculcating the use of articles of diet that shall give due exercise to the muscles of mastication, and prevent them, and the bones to which they are attached, from wasting.

It may next be asked, Can we, by any treatment, influence beneficially the developing teeth of the fœtus in utero, through a mother the subject of either of the diatheses or cachexiæ which have been named? Little reliance can in most cases be placed upon treatment specifically directed to this end, and we must depend mainly upon measures for the amelioration of the mother's general health, and the eradication of any definite morbid constitutional taint. To show that defective teeth might occasionally result from deficient supply of the necessary pabulum through the mother, Dr. Thorowgood has brought forward several cogent facts. He has pointed out that a hen with a broken bone lays, during the time the fracture is uniting, soft eggs; the earthy salts which should go to harden the shell being needed for the repair of the fracture. In a pregnant woman the union of a fracture is slow; the inference being that the lime salts are all required for the formation of the bones of the fœtus. In presence of these facts a rule may be established that in every case of cachexia during pregnancy, and particularly where there is a tendency to atrophy and bony wasting, there should be administered mineral nutrition, both dietetic and therapeutic. It is difficult to believe that any treatment could influence some cases in which a strong hereditary influence proceeding from the father gives a bias to the process of dental development. A mother with good dental tissues will often bear children with defective teeth, having the closest resemblance in form and structure to those of the father, in whom this may be the sole physical defect. We are ignorant of the actual physiological or pathological causation of defective enamel; but, as uncertainty exists, we had better err on the right side—especially as the error would be harmless—and enforce the rule that in every case in which ill-made tooth tissues are likely to appear, an attempt by diet and therapeutics should be made to supply to the developing tissues the mineral constituents of which they may stand in need. Also the dates at which the classes of teeth are calcified must be borne in mind, and that after the formation of enamel any attempts to prevent caries by improving the quality of that tissue must be futile. The exteriors of the crowns of all the temporary teeth—from caries of which children suffer so much—are fully formed at birth; these teeth can therefore be influenced only through the mother. By this time the first permanent molars and the permanent incisors and canines are so far advanced in development that it is open to doubt whether our further treatment can have any effect upon the enamel of these teeth. There is, however, no difficulty in administering lime to an infant from birth, as lime-water is an admirable aid to the digestion of milk in infancy.

We must recollect that although structural defect in the enamel is a prime factor in the causation of caries, there is another factor as potent—viz., vitiation of the secretions of the mouth. The diseases of our times, unlike those of earlier days, are largely those which give rise to the formation of such agents in the mouth, for many or most of them are either diseases of the digestive organs, or maladies accompanied by disturbance of the functions of digestion. In this way we may account for the prevalence of caries among certain portions of the community whose physique and general health in other respects are not to a corresponding degree inferior, and whose dental tissues are not of the worst structure. For example, the constant presence of dyspeptic troubles in some classes of factory operatives is enough to account for the rapid tooth decay from which they suffer. These people earn good wages, and are well housed and clothed; but their occupation is sedentary, their food is usually ill-cooked and too solid and coarse; they drink bad beer and coarse spirit, and the result is chronic dyspepsia. This disease is so common in some communities that it is regarded as one of those evils from which there is no escape. When speaking of the association of ill-made dental tissues with certain diatheses, I was not unmindful that some of these diatheses have also as a common accompaniment vitiation of the secretions of the mouth. Thus one type of scrofulous subject—that with coarse features, muddy complexion, and long thick upper lip, has usually a chronic condition of congested oral mucous

membrane with secretion of viscid mucus and saliva. Rickets, again, is often preceded and attended by a virulent form of acid dyspepsia.

The broad facts now before us are—first, that without acid, without vitiation of the secretions of the mouth, caries is impossible; and secondly, that acid capable of dissolving enamel—and of more rapidly dissolving enamel in proportion as the tissue is soft and ill-made—is always being formed in greater or less quantity in every mouth in which absolute cleanliness does not exist. In the term absolute cleanliness I include the absence of vitiated secretions such as accompany, in greater or less degree, every derangement of local or general health. Although the third predisposing cause to which I shall come presently takes an important part in determining the localisation of caries in some cases, this second cause should, with the first, which has been already discussed, account fully for the association of caries as an accompaniment or sequel to constitutional disease. As factors these causes vary infinitely in quantity in different individuals. It is not possible to find two individuals with teeth exactly alike in structure, and with organic defects occupying exactly similar situations. Add to this that vitiation of the oral secretions as a factor in the causation of caries is of constantly changing potency in the daily life of each individual, and we fully account for the variability in different cases of the time of onset, the point of attack, and the rate of progress of the disease, as well as for its frequent intermissions.

In combating this second cause of caries, the patient's general health must first be considered, recollecting that probably every lapse from a perfect standard will be accompanied by a proportionate vitiation of the secretions of the mouth. The question of general health is for the physician, not the dentist. But even with perfect health and perfect dental tissues caries may appear if organic débris be allowed to remain and decompose in contact with the teeth. The first thing, therefore, in every case is to ensure mechanical cleanliness by the use of tooth-brush and tooth-pick, which latter should be of quill or wood only. I direct that it be used at night to clear away remains of food from between the teeth, before they receive their final brushing. Where the teeth are crowded and are of delicate structure the use of floss silk passed between the teeth and rubbed to and fro supersedes the toothpick. Until lately I have been prescribing as a routine for healthy mouths a tooth powder containing two drachms of Castile soap, half an ounce of powdered orris, two drachms of borax, and two ounces of precipitated chalk. To this has been added a few drops of oil of cloves and of oil of lavender or attar of roses. It is, however, very rare indeed to meet an individual in whom perfect health is constant, and in whom one or other of the predisposing causes of caries does not exist. I have, therefore, latterly begun to urge my patients to use habitually a tooth powder composed of the solid ingredients named but containing instead of perfume, carbolic acid. I begin with a mixture, containing 1 in 40 of carbolic acid—that is, twelve drops to the ounce of powder—and I sometimes prescribe as much as 1 in 20. This, however, is too strong to be borne where the gums are tender. To disguise the flavour of the carbolic acid, I add eucalyptus oil, from ten to twenty drops to the ounce. I direct the mixture to be used freely—to be taken up on a wet tooth-brush, and the mouth to be freely rinsed with water at intervals during the brushing. In fevers and other diseases in which the patient is either too feeble or too listless to clean his teeth for himself this should be done by an attendant. In all cases where great vitiation of the secretions is present, as in the dyscrasia of pregnancy, extra means should be adopted to prevent putrefaction and fermentation in the deposits which form upon the teeth. Pasteur has shown that perchloride of mercury is by far the most potent drug we possess for this purpose; and a solution of a strength of 1 in 5000 is antiseptically equivalent to a 2 per cent. carbolic acid solution, which latter, although not more powerful than needed to prevent fermentation, is too strong to be used as a mouth wash. I find a pleasant mixture of perchloride can be made if one grain be dissolved in an ounce of eau de Cologne or tincture of lemons. A grain of chloride of ammonium must be added to each ounce to prevent the perchloride from decomposing. Of this mixture a teaspoonful is to be mixed with two-thirds of a wineglassful of water, and the mouth to be thoroughly rinsed with it several times a day. Before leaving this subject, I must point out that without due exercise in mastication teeth cannot easily be kept clean; and where the function is impeded by the presence of tender teeth these must be brought into a healthy state or extracted.

The third main predisposing cause of caries is crowding and irregularity of the teeth. This favours retention of particles of food and of other organic débris for long periods in contact with the teeth; it also greatly prevents the constant beneficial rubbing and polishing of which, in a well-formed jaw, every tooth during mastication gets a full share, as well as impeding access of the alkaline saliva to those very surfaces where acid-forming substances find their location. This cause of caries mostly arises from smallness and malformation of the maxillæ, a condition which is, no doubt, largely associated with the physical type presented by highly civilised man. Of the causes of deterioration of the apparatus of mastication, I have not mentioned one which, in my opinion, is not without importance—namely, sexual selection. The type of female beauty for many ages has included a small delicate jaw. I am afraid we cannot hope that, for the sake of the teeth of posterity, men will be advised to pick out big-jawed wives, but we can at least seriously impress hygienists with the fact that the human jaw, for its due development, needs adequate use, and that no dietary, however otherwise suitable its constituents, can be perfect which is composed of uniformally bland and soft substances calling for little or no mastication. In the meanwhile we have to deal with the crowded jaws which daily present themselves. The most universally beneficial measure to prevent caries in these cases, especially where the teeth are of imperfect formation, is the extraction of the six-year-old molars as soon as the second molars are well in place. The first permanent molars are, with rare exceptions, the worst made teeth of the set, and in the cases where room is urgently needed, it is seldom indeed that their permanent preservation is possible. I am firmly convinced that the removal of these teeth at the epoch named is more beneficial than that of any others in causing an equal and sufficient spreading apart of all the teeth and preventing the evils of crowding. The operation of filing and polishing the contiguous surfaces of incisors and canines as a most effectual means of cutting short the progress of incipient caries in crowded jaws is too well recognised to need comment.

The regulating of teeth by means of mechanical apparatus may be of service in overcoming the cause of caries under discussion, but in the use of apparatus we must be on our guard lest we excite the very mischief which we desire to prevent. Regulating plates should not be allowed to chafe the teeth; above all, they should never be allowed to remain in place for more than a few hours at a time; they should be removed at frequent intervals and thoroughly purified; whilst with equal frequency the teeth should be well brushed with an antiseptic tooth powder, and thoroughly cleansed from the coating of food débris which is invariably retained upon their surface by the plates.

ON SOME

ORGANISMS IN INDIAN CHOLERA STOOLS.

BY H. VANDYKE CARTER, M.D. LOND.,
BRIGADE SURGEON, H.M. BOMBAY ARMY.

UNDER ordinary circumstances I should have waited for the full report of the late German Cholera Commission before publishing the results of some inquiries of my own; but the appearance of a leading article by "E. K." (initials well known) in *Nature* of July 10th induces me now to state that in May last I communicated to the Medical and Physical Society of Bombay a provisional account, with preparations and drawings, of an organism I had found corresponding in aspect to Dr. Koch's cholera bacillus, as shortly described in the sixth Indian report of the said Commission. It is on the Society's records and upon the original drawing (see accompanying diagram) that the organism in question was compared by me to a vibrio rather than a bacillus; supposing that the delineations (as carefully done as possible) pertain to a single form, as they seemed to do. Latterly, however, not always meeting with the vibrio in cholera stools a few hours kept, and finding occasionally, though rarely, a similar organism in diarrhœal and dysenteric evacuations, I began to doubt the validity of my provisional identification, which has further been disallowed by an accepted authority in Calcutta whose valued opinion was sought. There being

as yet little that is peculiar told us regarding its cultivation, chemical, vital, anatomical and pathological relations, distant observers have to rely for guidance chiefly upon the morphological characters of the newly described cholera bacillus; and, unfortunately, I have not been able in India to see an authentic specimen of this organism. It is, therefore, the more remarkable that "E. K.," who in Europe has enjoyed such advantage, not the less arrives at results not much differing (as I judge) from those attained both previously and independently in Western India. Here, at least, is a noteworthy concordance. But in his identification, "E K." ventures further when asserting that "particularly a vibrio rugula"[1] is the organism which Dr. Koch describes as a

Organisms in Alvine Dejecta (Indian Cholera).

The so-called Cholera Bacillus (?), Vibrio (?), stained with roseine.

Fig. 1.—From fresh rice-water-like stools of a case which recovered; patient a low-caste man and a foul feeder probably. *a*, Common forms seen. *b*, Less frequent forms, and resembling vibriones more. A few ordinary putrefactive bacteria are shown, which will serve for purposes of comparison. × 800 : $\frac{1}{12}$ in., oil immersion.

Fig. 2—From a case of cholera supervening on variola (late stage) which proved fatal; material also fresh. *a b c*, Forms seen upon successive days, after which the stools became thicker and deep-coloured. × 650 : $\frac{1}{12}$ in., water immersion.

'comma-shaped' bacillus;" and if he be right, it well-nigh inevitably follows that the real cholera germ (if such truly exist) has still to be found. Because, first, it is *a priori* irrational to suppose that an everywhere widely distributed organism like vibrio rugula can alone be the essential cause of Asiatic cholera; and next, it is most improbable that mere imagination could have dominated the judgment of Dr. Koch. Doubtless the inference intended in *Nature* is that the so-called cholera bacillus is a myth; and be this as it may, some further details of the great discovery, declared to be assured, are now more than ever needed, especially by deeply interested inquirers in India.

Bombay.

[1] Sp. Cohn.

NATIONAL ASSOCIATION FOR THE PROMOTION OF SOCIAL SCIENCE.—At the meeting of this Association, which is to be held in Birmingham from the 17th to the 24th inst., the following special questions will be discussed in the Health Department, of which Dr. Norman Chevers is president:—The best method of dealing with town sewage, the products of house and street scavenging, and the products of combustion; the best means of securing those improvements in the dwellings of the poor which are essential to the welfare of the community; and how far the average death-rate of a population may be considered an efficient test of its sanitary condition. The hon. secretaries of this department are Mr. H. H. Collins and Dr. E. Seaton; and the hon. local secretaries, Messrs. G. A. Panton and R. M. Simon.

REMARKS ON THE

TREATMENT OF SYPHILIS BY HYPODERMIC INJECTIONS OF CORROSIVE SUBLIMATE.[1]

BY JOHN V. SHOEMAKER, A.M., M.D.,

LECTURER ON DERMATOLOGY AT JEFFERSON MEDICAL COLLEGE, AND INSTRUCTOR THEREON IN THE POST-GRADUATE COURSE OF THAT INSTITUTION; PHYSICIAN TO THE PHILADELPHIA HOSPITAL FOR DISEASES OF THE SKIN, ETC.

THE hypodermic injection of mercuric chloride for the treatment of syphilis has been received with great caution in the United States of America, notwithstanding that Dr. Lewin's book on the subject has been there translated and republished. I was one of the first to take up that treatment; and, encouraged by my success with it, read a paper on the subject before the meeting of the American Medical Association at St. Paul, Minnesota, in 1882. I analysed a number of cases treated in this manner by myself at the Philadelphia Hospital for Skin Diseases. I have since then practised it freely, and with even greater success than before. Syphiloderma of all descriptions were made to yield under this treatment, and no disadvantages of any consequence were experienced in its course. I have also tried the various additions and modifications of the original Lewin's mercuric bichloride injections. I have invariably given them up, preferring the method suggested by Lewin, in using a simple watery solution of corrosive sublimate. I have found, however, that the treatment could be carried very much further, and larger doses readily borne, and necessary for a thorough cure, than pointed out by him. I have invariably carried daily increased injections to the point where they produced systemic effect; and I have in many instances made, and found it necessary to make, injections of as much as half a grain (three centigrammes) per day. These strong injections were readily borne, providing they were sufficiently dilute, not less that half a drachm being employed for an injection containing half a grain (three centigrammes) of corrosive sublimate. When three large injections were reached daily, the systemic effect of mercury soon became apparent: as ptyalism, intestinal irritation, and occasional tremor, which, however, soon subsided on the cessation of the injections. Administration of potassium chlorate, and occasionally the exhibition of potassium iodide, although acting as an adjuvant in the treatment, did not serve to augment the systemic effect of the mercuric bichloride, but rather diminished its characteristic symptom. Stimulation by milk punch, and supporting treatment with ferrous iodide, were often found of great utility, but generally after twenty-four to thirty daily injections the syphilitic symptom had disappeared, and where the increasing dose had been persistently continued the relapse proved a rare exception indeed. I attribute the effect of this treatment to a formation of mercuric albuminate in the cellular tissue, which, insoluble to the liquids of the organism, gradually dissolved under the peptonising action found everywhere in the body, and thus produced a peptonised mercuric albuminate readily assimilable and eliminable in and through all parts of the body. I am led to this inference from the fact that otherwise toxic doses were innocent if injected under the skin; and if it were not for local irritation, I think even larger doses than I have mentioned could be borne without toxic effect. The local effects of the injection seem to bear out my views. Even large doses produce at most a swelling, which, though producing a somewhat erythematous condition of the skin, never suppurates or gives rise to deeper inflammation. I am free to say that in the thousands of injections I have so made I have never met with an abscess or serious inflammation, though the swelling of mercuric albuminate could be detected for several days. The only precaution I observe is to use a clean gold needle and to inject deep enough into the subcellular or connective tissue. Though the pain in these injections is always a disadvantage, if the solution is sufficiently diluted it will be lessened to a considerable degree, or augmented if more concentrated. No addition of any kind has in my hands lessened this, although I have with advantage ad-

[1] Read before the Section of Dermatology at the International Medical Congress at Copenhagen, August 12th, 1884.

ministered a quarter of a grain (a centigramme and a half) of morphine sulphate into the arm hypodermically prior to the injection of the corrosive sublimate. I regard it as necessary, to bring syphilis into abeyance and to obviate an early relapse, to constantly increase the strength of the mercuric chloride until its physiological effects are induced, and to continue its use in less vigorous manner until all symptoms have disappeared, sustaining the patient during this period with aliment, stimulant, and medication. Conducted in this manner, I regard the treatment of syphilis by hypodermic injections of corrosive sublimate as more rapid, reliable, cleanly, and less dangerous than either internal exhibition of mercurials, or iodides, or the combination of the two, or the filthy inunction treatment, either with or without variations. In no case have I found it necessary to use more than twenty to thirty injections, though I have frequently continued the after-treatment for a month or two, with decided doses of iodide of potassium.

LOBAR PNEUMONIA.

BY C. W. SUCKLING, M.D., M.R.C.P.,
PHYSICIAN TO THE QUEEN'S HOSPITAL, BIRMINGHAM.

DURING the past sixteen months I have had under my care, at the Birmingham Workhouse Infirmary, 100 cases of pneumonia. As this is one of the subjects inquired into by the Collective Investigation Committee, I think it my duty to publish the results of treatment and any facts especially noticeable in these cases.

Of the 100 cases, 73 were men and 27 women; 57 cases recovered and 43 died. The right lower lobe was affected in 40 cases, and the left in 33; the right upper lobe was affected in 17, and the left in 7. More than one lobe was affected in 3. The ages of the patients were as follows:—

Ages.	Cases.	Deaths.
Between 10 and 20 years	3	2
,, 20 ,, 30 ,, ...	13	1
,, 30 ,, 40 ,, ...	19	5
,, 40 ,, 50 ,, ...	17	5
,, 50 ,, 60 ,, ...	19	11
,, 60 ,, 70 ,, ...	18	11
,, 70 ,, 80 ,, ...	9	6
,, 80 ,, 90 ,, ...	2	2

It will be observed that the percentage of deaths increases with the age of the patient. The two deaths which occurred between the ages of ten and twenty years were cases of pneumonia of the upper lobe, one of which was complicated with acute Bright's disease, the pneumonia not being secondary to the kidney mischief, but both being due to the same cause—exposure to cold. In 24 cases the upper lobe was affected, and 10 of these cases were fatal; in 8 of these 10 fatal cases, there had been previous chronic bronchitis or apical mischief (phthisis). Uncomplicated apical pneumonia is in my experience no more fatal than ordinary pneumonia at th[illegible]se; but where there has been previous lung mischief it is almost invariably fatal. Apical pneumonia was common in old age; 7 of the cases occurred in people of over fifty years. In 22 of the 100 cases previous lung mischief in the shape of bronchitis and emphysema existed. I find that where pneumonia supervenes in such cases it is very fatal. It will be observed that the majority (65) of my 100 cases occurred in patients over forty years of age, and there is no doubt that pneumonia in people over this age is greatly to be dreaded. It must also be remembered that the patients are derived from the lowest class of people—a class much addicted to alcoholism, and broken down by want of food and exposure, and therefore exceedingly bad subjects for an acute disease like pneumonia. There is a great contrast between these cases and those I have had as hospital patients; the latter as a rule do well, and we have little dread of pneumonia in a young and previously healthy subject.

Rapidity of onset, rusty expectoration, and critical defervescence were the three most constant symptoms in the above cases (in addition to the usual physical signs) Rusty-coloured expectoration occurred in thirty-five cases, and whenever this is present, I take it to be pathognomonic.

As regards temperature, I have only met with hyperpyrexia (a temperature of over 105° F.) in two cases, and both proved fatal. This may be accounted for by the ages of the patients, for I find that the older the patient the less the degree of pyrexia, and it is in young subjects that we meet with hyperpyrexia in pneumonia. Still, even in old people the temperature chart of pneumonia is characteristic, in that there is always a sudden rise and critical defervescence.

Cyanosis was observed in four cases only; all were over fifty years of age, all had suffered from bronchitis for years, and all proved fatal.

The pulse is the most valuable guide to prognosis in pneumonia. A pulse of over 120 in an adult is serious, and when over 130 the case is generally fatal. In twenty-two cases the pulse was noted to be irregular, and frequently intermittent, often becoming so as death approached. It is my custom to take pulse tracings in all severe cases, and I frequently find inequality in the base line, intermission, and irregularity in volume, often also hyperdicrotism. All such symptoms are to be regarded as very serious, and as a strong indication for the free use of stimulants. In fact, the great majority (I think I may say all) of cases of pneumonia die of heart failure.

Jaundice was observed in four cases, and the right lung was affected in all, the upper lobe in one, the lower in three. Herpes was observed in four cases. Diarrhœa occurred in five fatal cases; it was evidently not critical, for the temperature remained high; diarrhœa, unless critical, is a bad sign. Friction was heard over the inflamed lobe in ten cases. Hyperresonance (occasionally the cracked-pot sound) was frequently observed over the upper lobe when the lower was affected.

As to the cause of the attack, in one case only could I obtain any evidence of infection, and that was in the case of a woman who said, "I caught it from sleeping with my daughter, who has just had inflammation of the lungs." In many cases the disease was clearly attributable to exposure to cold; in several it came on after a bath. The majority of cases among patients previously living in the workhouse occurred during the winter months, when the weather was severe and easterly winds prevailed. It will be observed that nearly three times as many males as females were affected, the mortality being about the same in both.

In a disease like pneumonia, which is shortlived and in which there is such a great tendency to heart failure, a stimulant plan of treatment is in the majority of cases absolutely essential. I know that in children and young adults stimulants may be unnecessary. Aconite and tartar emetic may do good, but in the cases that I have had at the infirmary I dared not give them. In one or two cases where I have used these drugs, the patients being young and the fever high, dicrotism has become marked and delirium has supervened, necessitating the free use of stimulants. So that although it is by no means always necessary to begin with alcoholic stimulants, still I find that it is, as a rule, safest to put the patient on tonics and stimulant medicines—e.g., cinchona and ammonia. I am perfectly sure that I have saved several lives by free stimulation with alcohol; and were I to have pneumonia myself, I would prefer to be under the care of a physician who had no dislike to the use of alcohol in this disease. As to the treatment of hyperpyrexia, quinine is the best remedy, and perhaps the cold pack. I have used the cold bath once; but the effect on the pulse was so bad that I shall never use it again in pneumonia. To ease pain, morphia injections, hot poultices, or a few leeches suffice; I have several times seen good results from the use of the latter. Bloodletting in pneumonia, I believe, is rarely advisable, and in most cases is dangerous. In one case, where there was marked cyanosis, I bled to four or five ounces, with the result that the patient regained consciousness, but afterwards died. Perhaps if it had been done earlier it might have been more effectual. I have lately had four cases (occurring in the workhouse, and therefore seen on the day of the attack), in which the disease has been aborted by quinine in ten-grain doses. All these cases were characterised by rigor, rapid elevation of temperature to 104° or 105° F., and by the presence of fine crepitation. After the administration of a single ten-grain dose of quinine the temperature has immediately subsided, and the disease has not progressed, the fine crepitation disappearing in a day or two. For this knowledge I am indebted to Dr. Austin Flint, who says that pneumonia in its early stage may be aborted by quinine. In all cases seen early this mode of treatment ought to be tried. Where the lung will not resolve, I find the frequent application of iodine does good, or an occasional blister.

Birmingham.

NOTES ON THE

TREATMENT OF NIGHT SWEATS IN PHTHISIS.

BY JOHN E. HOWE, M.B., M.R.C.S.,

LATE CLINICAL ASSISTANT AT THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA-PARK.

HAVING watched a number of phthisical patients during the last six months at the above hospital, I wish to state my experience of some of the drugs there used, and their power of alleviating this very common symptom—a symptom that it is very important to reduce as much as possible. These notes are from many cases, but especially seventeen cases on which daily reports were taken during their stay of many weeks in the hospital. These seventeen cases were under Dr. S. West, and I would here thank him for his kind assistance. The importance of nutrition in phthisis is admitted, and the fortnightly weighing-day is all-important for prognostic purposes, as without doubt night sweats favour wasting. Patients will have a better chance of improving their nutrition if this extra drain can be stopped; and surely night sweats and consequent damp clothes must add to the risks of fresh chills, besides making patients miserable and uncomfortable, and spoiling their night's rest. It is right, therefore, to prevent sweating if possible, although some physicians do not admit this, considering it useful in reducing the temperature; but that the hectic temperature is not due to the sweating is proved by the fact that the same character of temperature is maintained after the sweats have ceased under treatment, or even in some cases the temperature chart has markedly improved. It is well known what great power atropia has over night sweats, and it is the object of these notes to contrast with this drug some others used at Victoria-park Hospital—namely, strychnia, nitrate of pilocarpine, and oxide of zinc. Strychnia was first recommended by Dr. Lauder Brunton in the St. Bartholomew's Hospital Reports, 1879, from five to thirty minims of tincture of nux vomica having been given in four cases with success. At Victoria-park Hospital, from six to twelve minims of strychnia solution were prescribed as a night draught in many cases, and it succeeded admirably in most of them. The full dose of twelve minims was seldom necessary, but no ill effects or discomfort was noticed from so large a dose. Some of the patients slept very much better during the exhibition of the strychnia, to which gratifying result the increased comfort of the patient from absence of damp clothes may in some measure have conduced; but I think the drug had a good deal to do with the increased sleep, as this was not noticed in other cases in which the sweats were prevented by other drugs; in one case it markedly lessened the cough. Nitrate of pilocarpine was also given as a night draught, in doses varying from one-twentieth to one-eighth of a grain, one-twelfth of a grain being the most usual dose; in the majority of the large number of cases in which it was given the result was good, the patients being most grateful for the relief from the sweating. It seldom produced any of its physiological action, and, even if it did so, it was very slight sweating for half an hour after the draught, except in one case. One morning note only was as follows: "Sweated copiously for an hour after the draught"; but in this case, as in the others, there was no more sweating for the rest of the night. In a few cases in which the night sweats had commenced before the administration of the night draught, the sweating quickly terminated. Occasionally the action of the draught was not of long enough duration; for if given at 9 P.M. sweating would commence about 4 A.M. next morning. It is well in these cases to repeat the draught in the middle of the night. Oxide of zinc, in doses of from five to ten grains, was fairly successful in the few cases tried with it. In one case it was very successful indeed, as on discontinuing the drug the sweats recurred, to be again controlled by the same drug. It is necessary to state with regard to strychnia, and also pilocarpine, that their full action may not be developed the first night; also that the action of the drug lasts more than the one night; so that it is possible to discontinue the draught and yet no sweating occur for a few nights. In some cases even the habit of the sweat centre seemed permanently altered by the drug, and thus no more sweating occurred during the remainder of the patient's stay in the hospital. The result was not always so satisfactory, for in some cases the drug seemed to lose its effect, and the sweating previously prevented would slowly return, even during the continuance of the draught; but a change of drug was always successful in these cases. The three drugs, strychnia, atropia, and pilocarpine, only failed completely in one case—a man with phthisis, with his left pleural cavity nearly full of pus. Thus we see that strychnia and pilocarpine can influence night-sweats. But are they better than atropia? No, not better. Are they as good? Probably yes. They are nearly as sure, and they are free from the great drawback to atropia—viz., the dryness of the throat produced, which is very troublesome in some cases, and certainly appears to increase the cough. Some patients seem very subject to this dryness of the throat, and it is in these cases that it is so useful to have other drugs to fall back upon. It is wise to prescribe the atropia in a fluid form, as the pill may not be digested by the stomach. Thus in one case atropia pill ($\frac{1}{100}$ gr.) had no effect, whilst two minims of the atropia solution ($\frac{1}{100}$ gr.) was very successful. Also atropia and morphia had better not be combined, as their antagonism seems to prevent a good result; if the morphia is necessary, then prescribe another drug for the night sweats.

Knowle Vicarage, Warwickshire.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WEST LONDON HOSPITAL.

[CASE OF TYPHOID FEVER WITH HIGH TEMPERATURE (105·8° F.) TREATED BY ICE PACKING; RECOVERY.

FOR the following notes we are indebted to Mr. Harold Hendley, house-surgeon.

Phœbe M——, aged eighteen, general servant, was admitted on May 22nd, at 5 P.M., complaining of having suffered for seven days from sickness, giddiness, and headache, but still able during that time to continue her work. She had slight dyspnœa, but no cough; lips parched, tongue moist and covered with a white creamy fur, skin hot and moist, face flushed, bowels open, passing frequent watery black stools; lungs and heart normal. The temperature on admission was 103·6° F.; at 7.30 P.M. the temperature rose to 104·6°; at 10 P.M. to 105·4°. She was then packed in ice for ten minutes. She expressed great relief. The temperature had fallen to 103·2°.

May 23rd.—Passed a fairly good night, delirious at times; at 9 P.M. the bowels had been opened seven times since admission; character of motion thin and yellowish. Temperature at 9.30 A.M. 104·2°; bowels opened five times; very restless towards evening. Temperature at 10.15 P.M. 105·8°. Again packed with ice for ten minutes. Greatly relieved. Temperature reduced to 102·2°.

24th.—Somewhat delirious during the night, and began to complain of aching pains all over the body, especially in the abdomen. Temperature at 9.30 A.M. 103·4°; at 6 P.M., 104°; at 10 P.M., 105·2°.

25th.—Abdomen very tender, especially in the right iliac region; four or five rosy lenticular spots on the abdomen, disappearing on pressure. Temperature at 9 A.M. 104·4°; at 10 P.M., 105·4°.

26th.—Temperature at 9 A.M. 103·8°; at 10 P.M., 104·6°. Bowels open seven times.

27th.—Temperature at 9 A.M. 103°; 8 P.M., 105·4°. Packed in ice for half an hour. Slight rigor. Temperature reduced to 103·2°.

31st.—Tongue still coated with white fur, but moist; lips parched; increased number of spots over the abdomen and thighs. The patient complained of a great deal of pain in the stomach, and hot fomentations with opium were applied. Temperature at 7.30 P.M. 102·4°.

On June 3rd and 4th a slight rise in temperature occurred.

5th.—Patient very irritable. Spots fewer, but larger and more raised. Temperature 102·4°. Diarrhœa still continues.

6th.—Temperature at 9 A.M. 101°. Patient more comfortable. Bowels open six times.

With the exception of a slight rise on the 8th, the temperature remained about one degree below normal in the morning, and one degree above in the evening until the 18th, when a relapse took place.

14th.—Took bread-and-butter; on the 15th still two or three spots on abdomen and chest, complains of deafness, bowels open once, motion thick.

13th.—Temperature at 9.30 A.M. 97°; 9.35 P.M., 103·4°; pulse weak and rapid, great pain in lumbar region. An enema was given at 10 P.M., consisting of castor oil and soap and water. Twenty drops of sedative solution of opium were given by mouth. Pains relieved at 11 P.M.; temperature 101·2°.

19th.—Pulse somewhat stronger, still rapid; bowels open twice, motion dark and watery. Temperature at 9 A.M. 101°; 2.30 P.M., 104·2°; 7.30 P.M., 101°.

20th.—Patient much better, but had rise of temperature in the evening.

24th.—Temperature still high, spots all disappeared, bowels opened twice; no pain in abdomen. Patient began to mend rapidly, though the temperature did not reach normal till July 7th. She was discharged July 22nd, fairly strong, temperature normal.

Remarks.—In this case the patient experienced great relief from each ice packing, and each time it was performed expressed great comfort both during and after the application. It seems to be much more efficacious than sponging or the wet packing; it is quicker than the former, and less troublesome to both nurse and patient than the latter. In this instance a waterproof was passed next to the bed with a blanket between it and the patient. A large quantity of ice was then packed next to the skin along the trunk only, and the mackintosh and blanket folded over. The patient experienced no shock from the ice, but seemed to like the contact. At the end of the packing, the ice being removed, the blanket was drawn over the body, the moisture absorbed and the mackintosh and blanket both withdrawn. The relapse in the case is difficult to account for, but the fact that the temperature came down at once after the use of an enema might lead one to suspect that it might be caused by the retention of effete matter in the bowel.

LEITH HOSPITAL.

CASE OF RHEUMATIC FEVER WITH HYPERPYREXIA (109·2° F.) FOLLOWING ACUTE TONSILLITIS; ICE PACK; TEMPORARY RELIEF; DEATH; NECROPSY; REMARKS.

(Under the care of Dr. GARLAND.)

FOR the following notes we are indebted to Mr. Herbert C. Male, M.B., house-surgeon.

Margaret R——, a servant girl, aged twenty-four, was admitted about midday on May 25th, suffering from pain in the joints and pyrexia. She had been previously under treatment for acute tonsillitis, which had developed on May 13th, and for which quinine in three-grain doses had been prescribed. She had always been a healthy girl, but was of a nervous, excitable temperament, and had recently joined the Salvation Army. She recovered from the tonsillitis, but complained of pain in all her joints on the evening of May 24th, and was sent to the hospital on the following morning.

On admission she was flushed and feverish, complained of headache, pain in the knees, ankles, and hands, the ankles being considerably swollen; copious perspiration. Temperature 100·8°. She was placed between blankets, ordered a milk diet, and to be given fifteen grains of salicylate of soda with two grains of carbonate of ammonia in camphor-water every four hours. The affected joints were wrapped in cotton-wool. The evening temperature was 103°. She passed a very restless night, did not sleep at all, and complained much of thirst.

May 26th.—The pain in the joints much relieved. Temperature (8 A.M.) 102°. The patient was seen about noon by Dr. Garland and by Dr. Struthers, who had previously attended her. She was cheerful, but appeared to be very nervous. Respiration was noticed to be rather rapid, and she complained of some shortness of breath and of a sensation of "ringing in the ears." There was a faint systolic murmur in the mitral area. No evidence of pericarditis, and the pulmonary sounds were healthy. About 2 P.M. she complained of severe headache, but fell asleep shortly after, and slept till between 3 and 4 P.M., when she woke up suddenly in a great fright and said she had had a dreadful dream. She talked in a strange, excited manner, and attempted several times to leave her bed. About 5 P.M. the nurse thought the girl was "going off her head." She was restless and excited; answered questions correctly, but had a delusion she was going home. The pulse was rapid and the breathing accelerated. Temperature in axilla 106·2°; perspiring freely. She was given ten grains of quinine, and cold cloths were applied to the head, after which she was quiet and rested. At 6.45 P.M. she started up, talking in a loud, excited manner, imagining she saw things on the wall, and was with difficulty persuaded to lay down in the bed. Temperature 106.4°. Her head was ordered to be shaved, and her body sponged all over with cold water. About half an hour later she became wildly delirious, could not be reasoned with, and was so violent that she had to be strapped in bed. The thermometer rose to 106·6° in the axilla, but could not be properly retained, owing to her struggles. The clothes were now removed from the bed, and she was wrapped in sheets wrung out of iced water. She became much quieter, and soon lapsed into a semi-comatose condition. The sheets were changed frequently. At 8.15 P.M. the temperature had risen to 109° in the axilla. She was lying on her back with her mouth open, quite unconscious. Pulse rapid and feeble, respiration stertorous, pupils much contracted and insensible. One drachm of sulphuric ether was given hypodermically. 8.30 P.M.: Temperature in rectum 109·2°; pulse 140, barely perceptible; respiration irregular and gasping; death seemed imminent. Ice was packed over and round the body, in the axilla and hands, and half a drachm of ether injected. 9 P.M.: Temperature in rectum 106·6°; breathing freer. Still unconscious and insensible to stimuli. 9.15 P.M.: Temperature in rectum 103·6°; pulse 140, fuller; decided improvement in condition; pupils dilating and slightly sensible; feeble attempts to cough and occasional twitchings of hands. Half a drachm of ether injected. 9.30 P.M.: Temperature in rectum 100·6°; pulse 132; breathing much freer. Pinching the skin caused her to move slightly. She rolled her head from side to side, and tried to open her eyes. The cold pack was now removed. She was wiped dry, and placed on another bed between blankets. 10 P.M.: Temperature in rectum 98·4°; pulse 120, of fair volume; surface of body very cold. Hot bottles applied to sides and feet. Swallowed a little brandy-and-water with difficulty. 10.30 P.M.: Temperature in rectum 98°; pulse 112; respiration slower and less embarrassed. More sensible to external impressions. Pupils acting freely. No return of consciousness. Half-drachm of ether injected. 11.15 P.M.: Condition much the same. Twitching of muscles of mouth and attempts to expectorate. Moving about more in bed. 11.45 P.M.: She started as if suddenly awakened, uttering unearthly screams, expression indicating extreme terror. The slightest touch or approach of light produced general convulsive tremors and appeared to excite the greatest alarm. Temperature in rectum 101°; pulse could not be counted owing to spasms of hands when touched. Breathing laboured, long inspirations with peculiar hiccoughy catch at full inspiration. Saliva collected in mouth and spasmodic attempts of expulsion. Pupils dilated. Ice-bag applied to head, but had to be discontinued as it produced spasms. Ward was darkened, after which she was quieter.

27th.—12.15 A.M.: Temperature 102·4°; respiration 40. Lay quietly in bed, if left alone, with wild vacant stare, but screamed and shrank from anyone who approached or touched her. 1 A.M.: Temperature 104·8°; respiration 44, more laboured. A lighted candle produced violent convulsions and caused great agitation. Spasmodic contractions of muscles of mouth, with rolling of eyes and blinking; mouth firmly shut and attempts to spit saliva out of closed lips. Pupils widely dilated. The patient died somewhat suddenly at 1.20 A.M. with frothing at the mouth and symptoms of asphyxia. Temperature immediately after death 105·4°, and fifteen minutes after death 104·2°.

Necropsy, eighteen hours after death.—Post-mortem lividity very slight; rigor mortis present only in lower extremities. Dura mater congested and about two ounces of blood-stained serum escaped on its incision. Brain substance firm, vessels on surface distended; on section white matter presented a mottled injected appearance, the puncta

vasculosa being more numerous than usual; the brain appeared otherwise normal. Heart soft and flabby; right auricle and pulmonary artery contained firm decolourised clots; valves healthy. Lungs congested. Spleen enlarged, very soft and friable, and tore on removal. Liver much enlarged, adherent to diaphragm; surface rough and some thickening of capsule in parts; section very soft and fatty. Kidneys much congested, otherwise normal. The bladder was empty.

Remarks by Mr. MALE.—This case is interesting in illustrating the relationship between tonsillitis and acute rheumatism, to which Dr. St. Clair Thomson recently drew attention in THE LANCET, May 24th, and in showing once more the efficiency of the cold pack treatment in reducing temperature. Like many of the cases published, the hyperpyrexia was preceded by an alleviation of the joint symptoms and by insomnia. The occurrence of hyperpyrexia within forty-eight hours of the commencement of the rheumatic fever is unusual, and the extreme reflex excitability, at the last approaching almost a hydrophobic condition, I have not found mentioned in other cases. Death apparently did not result from exhaustion, but from spasm of the muscles of respiration. Some observers have noticed an increase in the amount of urine passed previous to the rise of temperature. In this case no urine was passed for ten hours previous to death, and at the post-mortem examination the bladder was found empty. The question arises, Was the suppression of urine caused by the elevation of temperature, or was it a factor in its production? The fact that there was no return of consciousness after the reduction of the temperature, and the subsidence of other grave symptoms, show the necessity of having early recourse to the wet packing, and not waiting till such alterations have taken place in the brain from the excessive tissue change, as must so seriously interfere with its functions and materially lessen the patient's chances of recovery.

SOOREE CHARITABLE DISPENSERY.

A CASE OF CATHETER FEVER; DEATH.

(Under the care of Dr. G. C. ROY, Civil Surgeon.)

JOOGUL, aged about thirty-two, Hindoo, came to the dispensary on May 19th, with the following history of his case:—Eight years ago he had gonorrhœa, and he had passed water in small streams for the last five or six years. Until about a month ago he could urinate only in drops, and with great difficulty and straining. Micturition was frequent, some fifteen or sixteen times in twenty-four hours, and each act used to take him half an hour, and made his life miserable. His urine was said to be clear. In other respects he was healthy looking. Catheterism was attempted. There was a tight stricture in front of the membranous portion of the urethra, which barely permitted a No. 3 catheter (English) to pass. As there was some bleeding in the manipulation, no further attempt was made on that day, but the patient was dismissed with a dose of quinine and tincture of opium.

On the following day he attended the dispensary with fever, which had come on some time during the night. A saline diuretic mixture and tincture of Indian hemp gave relief, and the patient soon felt as well as ever. He could pass water in better streams, and he asked permission to go home and present himself after a few days. He remained well for two days, when he had a relapse of fever, but not without shivering. The fever was of a remittent type; but the patient being away from any medical advice, nothing was done for three days. On the fourth day he returned for treatment. His temperature was then about 103° in the morning; pulse 120; great thirst, burning of the body, and restlessness, and complete anorexia. The bowels were costive. There was no pain over the bladder or perineum, or any tenderness on rectal examination or thickening. In fact, very careful examination was made to detect any formation of pus. He complained of pain over the region of the right kidney, which was full and tender, without any distinct sense of fluctuation. His urine was turbid and milky, as if mixed with pus, and contained bits of soft tissues. A poultice was applied over the right loins, and a mixture of Indian hemp was given. This was changed afterwards to quinine, tincture of perchloride of iron, and tincture of henbane; brandy was also given. On the 1st of June the temperature became subnormal. The body was bedewed with cold clammy sweat. Costiveness gave place to diarrhœa. Thoracic râles indicated œdema of the lungs, and he sank on June 2nd, retaining consciousness to the last.

Reviews and Notices of Books.

The non-Bacillar Nature of Abrus Poison. By C. J. H. WARDEN and L. A. WADDELL. Calcutta. 1884.

THIS little volume embodies the results of an inquiry into the existence of the so-called "bacillus of jequirity seeds," with observations on the nature of abrus poisco, its chemical properties and physiological action. The practical application of the knowledge thus far acquired to the treatment of cases of abrus poisoning is also indicated. The opportune presence of Dr. Koch and the German Cholera Commissioners at the Medical College Hospital, Calcutta, enabled the authors to conduct the bacterial part of the research with a thoroughness which they could not otherwise have hoped to attain. It is a little unfortunate for the authors that the main principle for which they contend has been anticipated in England by two other independent workers—namely, Klein and Benson.

In the first chapter the question of the presence in the seeds of jequirity of specific bacteria or their spores is discussed. The intensity of the abrus ophthalmia is said to depend on the strength of the infusion and the frequency of its application, and this fact is held to be inconsistent with bacterial infusion, and to be an argument in favour of a chemical action. The mere presence of bacteria at the site of inflammation is not regarded as remarkable, for the infusion used by Sattler was unsterilised, and the albumincus constitution of the infusion was specially favourable for the growth of micro-organisms. In the third chapter the essential lesions of abrus poisoning are contrasted with the alleged bacterial lesions described by M. Cornil. The sixth chapter deals with and disproves the alleged immunity against further attack which attends the injection of a single small dose.

The second part of the work is chiefly concerned with the chemical nature of abrus poison, the activity of which is held to depend on a substance of proteid characters, which is named abrin. The physico-chemical properties and composition of this active principle, its place amongst the proteids, and its relations with vegetable albumen are likewise treated of. It has also been found that the albumen of the roots and stems of abrus precatorius is poisonous. This discovery is of very great practical importance, and should serve to banish from the Indian Pharmacopœia the roots of this plant, which are recommended as a substitute for those of glycyrrhiza glabra as a demulcent. The poison is, however, only active when directly introduced into the circulation. Abrin is said to bear in many respects a strong analogy to snake poson. Like it, it may be taken by the mouth with impunity. Heat lessens the activity of both poisons, but affects abin much more powerfully. The toxic symptoms of these two poisons also exhibit a certain degree of similarity—general depression, drowsiness, fall of temperature and hæmorrhage lesions. The marked differences, especially the convulsive phenomena, are considered to be accounted for by the more complex constitution of snake virus. A chapter is devoted to an account of the physiological effects of abrin on the blood, circulatory system, body temperature, nervous and other systems.

The last part of the text has to do with the management of cases of abrus poisoning. It appeared from experiments on chickens that dialysed iron given hypodermically at the seat of the abrus injection prolonged life.

We have recorded a sufficient outline of this excellent work to point out its careful and painstaking nature. The alliances of abrin with venom globuln might tempt to a hasty generalisation.

Thirty Years' Experience of a Medical Officer in the English Convict Service. By JOHN CAMPBELL, M.D., Staff Surgeon R.N. Pp. 139. London: Nelson and Sons. 1884.

THIS is a work deserving the attention of all who take an interest in the important but difficult question of the treatment of our criminal population. The author has given us the results of a long practical experience. After having served as medical officer in the navy for fourteen years—a training which must have been useful to him in his subsequent career—he was sent out as surgeon-superintendent of a convict ship to Tasmania, shortly before the abolition of the system of transportation to the Australian colonies. On his return he was appointed medical officer to Dartmoor Prison, from which he was transferred to the charge of the invalid hulks at Woolwich, and on the destruction of the *Defence* by fire in 1857 to the old prison at Lewes. In 1860, on the completion of the new invalid prison at Woking, he was sent there in charge of the invalid convicts. In 1875 a portion of the Woking Prison was set apart for the reception of lunatic criminals, as distinguished from criminal lunatics who are confined in the prison at Broadmoor; and Dr. Campbell remained in medical charge of the whole establishment till 1882, when he retired from the service. He therefore had long experience in the management of a most difficult class of prisoners—men who, from disease, were unequal to laborious employment, and whom it was necessary, owing to their physical condition, to exempt from punishments which would have been applicable to healthy prisoners. Dr. Campbell has not given any details of the health or of the death-rate of the prisoners at Woking, but he says: "As a proof of the healthfulness of the situation, it will suffice to state that there has been an entire exemption from epidemics; and with the exception of one case of typhoid fever, occurring in a prisoner who had been employed in cleaning a drain, all the complaints were of a catarrhal nature." The chapters on malingering and on the lunatic wing at Woking give a good idea of some of the difficulties experienced by medical officers of prisons, and of the responsibility involved in the efficient discharge of their duties. The chapter on the treatment of prisoners is interesting, and especially with reference to the effect of the separate system on their mental and bodily condition. In the preface, Dr. Campbell, with reference to the views of those who think that too much cannot be done for prisoners, justly remarks: "It is very desirable to bear in mind that in carrying out any system prompted by humanity everything approaching to mistaken sympathy with its objects should be avoided, as suggesting to their minds excuses for their misdeeds, and tempting them to look upon themselves as ill-used individuals. This is perhaps the most important matter on which I would insist."

OUR LIBRARY TABLE.

Experimental Chemistry for Junior Students. By J. EMERSON REYNOLDS, M.D., F.R.S., Vice-President of the Chemical Society of London, Professor of Chemistry in the University of Dublin. Part III.: Metals and Allied Bodies. London: Longmans. 1884.—Any student who works carefully through Professor Emerson Reynolds' three excellent little text-books, and accompanies his work with a little additional theoretical study, will gain a sound, intelligent, and practical knowledge of inorganic chemistry. Such a course is superior to all others, and affords the highest kind of scientific training. Unfortunately it is practically impossible for most students of medicine. It might be adopted, and doubtless is, in the advanced classes of public schools and colleges; but for the ordinary medical student, with his three months' summer course, it is out of the question. Professor Reynolds describes in the three volumes no less than 664 distinct experiments, all useful and all sufficiently explained, and the experiments are interspersed with much valuable information of a theoretical as well as of a practical kind.

The Law of Adulteration. By THOMAS HERBERT. London: Knight and Co.—The passing of the Sale of Food and Drugs Act, 1875, inaugurated a new era in connexion with the protection of the public against adulterated or mixed articles of food, &c.; and it may be regarded as the outcome of the revelations which resulted from the extensive inquiry which was carried on in THE LANCET, into the extent and character of the adulterations which were practised at that time. The improvements which have taken place are, in many respects, very marked. Evidence of competency is now required before an analyst's appointment receives official sanction; the duties of analysts are defined, and the various proceedings which are authorised to be taken as to adulterations have been fully set out. But since the Act was first passed legal decisions on obscure points have been given, and other difficulties have been found to arise. These have, to some extent, been met by the Amendment Act of 1879; but notwithstanding this, it is by no means easy to understand precisely how far legal decisions influence the action of both the authorities and the public. The present volume professes to clear up all these difficulties, and from the manner in which the task has been achieved we can hardly doubt that the writer has assumed a *nom de plume*, and that the work is to all intents and purposes an authoritative epitome of the state of the law of adulteration emanating from an official source. Every legal decision bearing on the subject is to be found recorded in it; copious extracts are given from all the important official reports and documents bearing on the Acts; and the information is so put together that, whether help in coping with adulteration is needed on the bench, in the laboratory, at a meeting of town councillors, in the shop, or in the private house, it will be found with the least possible difficulty, and in a form well suited to its intended purposes.

Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin. Herausgegeben von RUDOLF VIRCHOW. Band XCV., Heft 3. Berlin: G. Reimer. 1884.—This number contains the following articles: 1. On the Fate of Tissues implanted in the Organism, by Professor Zahn of Genf. 2. On a Case of Ulcus Rotundum Simplex Vaginæ, by the same. 3. Contribution to the Physiology and Pathology of the Blood, by the same. 4. Researches on the occurrence of Putrefactive Germs in the Blood of Healthy Animals, by the same. 5. On the Absorption, Formation, and Deposit of Fat in the Animal Body, by Dr. Munk of Berlin. 6. The Bacteria of Swine Plague, by Dr. Klein of London. 7. A further Historical Sketch on Cæsarean Section in the Talmud, by Dr. Rawitski of Czarnikow. 8. On the Chemical Composition of the Urine of Swine, by Dr. Salomon of Berlin. 9. On Trichinosis and on Actinomycosis in Swine, by R. Virchow.—Band XCVI., Heft 1, contains: 1. Research on the Cicatrisation of the Arterial Intima and Media after severance by Ligature, by Professor Zahn. 2. On a Case of Perforation of the Uterine Wall by a Placental Polypus, with consequent Retrouterine Hæmatocele, by the same. 3. Note on the Physiological Relation of the Thyroid to the Spleen, by Dr. A. Tauber of Warsaw. 4. The Influence of Baths (Fresh Water and Carbonated) and of Muscular Action on the Circulation, and on the Treatment of Heart Disease by these three factors, by Dr. Jacob of Curdowa. 5. The Action of Phosphorus on the Fœtus, by J. M. Miura of Japan. 6. Microscopical Researches on some of the Vital Phenomena of the Blood, by Dr. Lavdowsky of St. Petersburg. 7. On Gartner's (Wolffian) Ducts in the Human Female, by C. Rieder of Basle. 8. On Thermoneurosis, by Dr. Scherschewsky of St. Petersburg. 8. Note on Actinomycosis, by Dr. Oscar Israel

Opium Smoking and Opium Eating. By GEORGE SHEARER, M.D. 1883.—The nucleus of the present treatise formed the subject of an essay by the author on "The Medical Means of Counteracting the Effects of Opium Smoking in China, with Suggestions as to the best Method of Conducting Opium Refuges." This essay was awarded a prize of £50 in 1881. Besides enjoying the advantage of actual hospital work among the Chinese, the author has consulted almost every available work which has yet appeared on the subject. The little book is a thoroughly popular production written somewhat in the sensational style. We have, nevertheless, no wish to condemn the book. As good wine needs no bush, so we may say that the dreadful consequences of opium eating and smoking need no colouring. Dr. Shearer believes that if the practice be vulgarised it will die out. By which is meant that if we can get the habitués to see that their habit is disgraceful, mean, and cowardly, they will renounce the practice. Education of the moral sense offers itself as perhaps the most hopeful means of combating the vice, but its chances of successful operation are small in face of the miseries of the surroundings of the lower classes of Chinamen.

The Cinchona Barks. By FRIEDRICH A. FLÜCKIGER, Ph. D. London: J. and A. Churchill. 1884. — Dr. Flückiger is well known in the chemical world, and his researches on the cinchona barks have marked a new epoch in the history of these valuable medicinal agents. The present book is a translation from the original German text, with some additional notes by F. B. Power, Ph.D. Eight lithographic plates and one woodcut serve to convey pictorially some idea of the different varieties of the cinchonas and their botanical structure. These lithographs are excellent representations. A separate section is occupied with a list of the more recent publications relating to the cinchonas and cinchona barks. The work treats of the botanical origin of cinchonas; of the most important species; of remisia, the most closely connected allies of the cinchonas; of their habitat; of cinchona culture; of the modes of collecting the barks; their appearance and anatomical structure; the contents of their tissue; the location of the alkaloids; varieties of cinchona bark; so-called spurious cinchona barks; cinchona cuprea; commercial statistics; chemical constituents of the cinchona barks; amount of alkaloids; quantitative estimation of the same; their manufacture; history of the cinchona barks to the year 1737; and their history to the present time. It will be seen that the work is not only exhaustive, but thoroughly interesting. We may refer to the fact that Dr. Flückiger is the possessor of the Howard Medal.

The Guild of Good Life. By B. W. RICHARDSON, M.D., F.R.S.—This small volume professes to be a narrative of domestic health and economy, and is published under the direction of the Committee of General Literature and Education appointed by the Society for Promoting Christian Knowledge. When it is remembered what a vast amount of experience Dr. Richardson has had in the writing of popular works, the readiness and skill with which he has produced the present volume of instruction and amusement will not excite surprise. Universal cleanliness is the main theme of the narrative, and it need not be said that where this desirable condition prevails, providence, thrift, and prosperity will not be wanting.

Hints on the Health of the Senses. By MACNAUGHTON JONES, M.D. London: Longmans, Green, and Co. 1884.—The author's chief desire in writing this little book is to offer to the public, as far as possible free from technical language and in the simplest form, some useful suggestions for the preservation of the delicate organs of special sense. The little work decidedly fulfils the purpose for which it is intended.

Charities Register and Digest. With an introduction by C. S. LOCH. Second Edition. London: Longmans, Green, and Co. 1884.—This volume, which is published under the auspices of the Charity Organisation Society, is a classified register of charities in or available for the metropolis, and a digest of information respecting the legal, voluntary, and other means for the prevention and relief of distress, and the improvement of the condition of the poor. The scope of the Register is larger than that usually aimed at in such works. This is mainly due to the introduction of information with regard to the various provident agencies, a knowledge of which is of the first importance to the charitable; and also to the attempt which has been made to give prominence to those large charities of the working classes which are habitually overlooked, but which are administered with a familiar acquaintance with the general circumstances of the recipients, and have a potency for good which may greatly exceed the more distant, though equally genuine, charities of other classes. No reference is made to the City parochial charities, as these are, in all but five parishes, to be re-organised in accordance with an Act passed in the past year. The lists of charities for the blind, deaf and dumb, reformatory and industrial schools, boarding-out committees, institutions for idiots and imbeciles, and convalescent homes, have been made as complete as possible, including institutions which are not metropolitan. By all concerned in the relief of distress this book will be found invaluable as a means of reference.

ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD FOR IRELAND.

WE learn from this report, which is of a highly interesting character, that the average daily number of persons receiving relief in workhouses during the year was 49,236, being a decrease of 1333 as compared with the number so relieved in the preceding year; but there was an increase of 1549 in the average daily number of persons who received out-door relief during that period, the numbers being 60,384 and 58,835 respectively. During the year 55,076 persons were under treatment in the workhouses for various affections, including 6372 cases of fever or other contagious disease, with a mortality of 13,164. Whilst there has been an increase of 641 in the total number admitted sick to workhouses, there has been a decrease of 28,275 in the number admitted who were not sick, thus showing a net decrease of 27,634 in the total number admitted during the year. The number suffering from fever or other contagious diseases was less by 1300 than in the previous year, and the total number relieved in workhouses was less by 28,474. Last year 605,865 new cases were attended by dispensary medical officers, which included 186,938 visiting tickets, and 106,071 persons were vaccinated or revaccinated during the same period. Of the 12,405 deaths recorded in workhouses, 2661 were attributed to old age, 1005 to atrophy, 2027 to diseases of the lungs, 981 to consumption, and 588 to fever. There were only 11 deaths from small-pox, as contrasted with 76 in the previous year. During the past three years it is satisfactory to learn that there has been a considerable decrease in the number of fever cases attended by dispensary medical officers, and although last year the decrease was not so marked as in the two previous years, yet it amounted to 358. The total expenditure of poor-rates for all purposes—viz., poor relief, medical relief, burial grounds, registration of births, deaths, and marriages, sanitary measures, expenses under Superannuation Act, &c., was £1,326,963, being an increase in the total expenditure as compared with the preceding year of £70,900. The current sanitary expenditure for the year was £52,285, in comparison with £51,345 in the previous year.

KING'S COLLEGE HOSPITAL has received a donation of £100 from the Queen.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 6, 1884.

QUARANTINE measures have once more proved themselves powerless in preventing the extension of cholera, whether by land or by sea. That quarantine, if rigidly carried out, may under some circumstances be successful we have no wish to deny; but we do maintain that in its application to European and other civilised countries having commercial and other intercourse, it affords little or no chance of success, and that by reason both of its almost certain failure and of the restrictions and conditions under which it has to be maintained, its application does infinitely more harm than good. "A quarantine," wrote Mr. SIMON, in his eighth annual report, "which is ineffective, is a mere irrational derangement of commerce; and a quarantine, of the kind which ensures success, is more easily imagined than realised." Quarantine, to be effective, must exclude from entry into a country or a district all persons coming from the infected country or district, except after such a detention as will cover the period of incubation of the disease to be dealt with, and it must prevent all communication between inhabitants of the two localities concerned. This necessarily involves the stoppage of all commercial and trading relations between the localities, including the stoppage of supplies of food and other necessaries, and it also means a prohibition of all passenger traffic except after detention for quarantine purposes. The result is that large lazarets have to be established, and here the actually sick, those suffering from suspected sickness, and the healthy, are huddled together. The occurrence of a single case of actual cholera, or of suspected cholera, amongst the detained involves for all the repetition of the period of detention; and the conditions of aggregation and otherwise under which such detention is alone possible are found to favour the spread of disease rather than to check it. In short, the lazarets themselves tend to constitute centres of infection. Any amount of disguise and deceit is practised in mild cases of illness to avoid further detention, and so it happens that persons who would have done no harm had they been allowed to pass on from the first, have, after contracting such an affection as choleraic diarrhœa, succeeded in securing their freedom only to convey infection in their track. Indeed, the restrictions of quarantine are so burdensome and vexatious that the more rigidly they are carried out, the more are contraband practices, both as regards persons and goods, resorted to. Land quarantine, or the application of a sanitary cordon, failed for this reason when Toulon was first affected with cholera; it also failed when applied by Italy against France, the disease, notwithstanding all restrictions, making its way into the provinces bordering on the French frontier and then extending further into the kingdom; it has failed as regards individual towns and cities in Italy, for notwithstanding the employment of thousands of troops, cholera made its way easily out of Busca and Spezia. It has since spread from Alicante in Spain as far inland as Novelda. The anticipation of quarantine also suffices to frustrate its intended purpose, for the moment cholera is known to exist in a town the inhabitants, fearing that they will be hemmed in with the sick, are seized with panic, and fly away hither and thither by any route that is open. It was in this way that cholera spread from several centres in the south of France, and in a similar way it was carried a distance of many miles by the multitudes who fled from Spezia. Land quarantine, indeed, was, according to a resolution of the International Sanitary Conference held at Vienna in 1874, declared to be impossible of execution and useless in view of the numberless and ever-increasing methods of communication which everywhere exist, and it was hence rejected by the Conference, the Italian representative, amongst others, assenting to the rejection.

Quarantine by sea is more possible of execution, but to be successful the country resorting to it must make up its mind to all but complete isolation, for unless it does so its attempts at exclusion of persons and things from suspected places will almost certainly be met by other attempts, and these generally the more successful, to evade the restrictions imposed. An example of this has just occurred in the case of the importation of cholera from France into Spain. The first appearance of cholera in Spain was at Alicante, on its Mediterranean coast; and there seems but little doubt either that persons unable to take ship directly from France to Spain without undergoing a vexatious quarantine had first travelled to Algiers and had thence reshipped, or that the quarantine measures at Alicante have of themselves failed. And so it has come to pass that the two countries that have maintained the most rigid quarantine against France have both become seats of the cholera by importation along the lines of human traffic. It was because all this was foreseen that the Vienna Conference, whilst recommending the adoption of certain regulations for those countries which still insisted on maintaining quarantine, passed a resolution recommending, in its stead, the system of medical inspection which is maintained in this country.

Of all the advantages which the system of inspection has over quarantine none is so important as the state of preparedness which it begets. Countries and towns relying on quarantine make no provision against its failure, and hence, directly disease succeeds in evading the measures adopted panic ensues. The system of medical inspection involves the examination of all and the isolation of the sick, and hence measures of isolation are provided beforehand. So, also, the country generally, having discarded its trust in quarantine and sanitary cordons, seeks to do away with the conditions which would favour the extension of the disease should it make its way into their midst, and it thus secures not only a better means of defence against infection than could otherwise be attained, but at the same time substantial improvement in its general sanitary circumstances, with consequent saving of life, health, and means. It is as yet impossible to say whether cholera will this year succeed in making an entrance into this country or not, but it is most certain that by the adoption of the system of medical inspection and isolation, together with the measures of sanitary reform with which that system has been allied, we are better prepared to meet the disease than we ever should have been

had we not abandoned resort to measures of quarantine, backed by the false sense of security which they engender.

WE must confess to a great deal of sympathy with the preference which Lord RAYLEIGH professes for the study of Classics as the basis of a general education. There is, of course, much to be said in favour of the utilitarian view which regards with regret the expenditure of a large amount of mental energy in the pursuit of knowledge on what is not in itself "useful," or perhaps we ought to say marketable. No one pretends to believe, for example, that the qualification of being able to make good Latin verses is of high commercial value. It must be conceded that the youth with even a smattering of science is better provided, so far as information—a totally different thing from education—is concerned, than the most learned classical scholar can be considered to be, for the active business of life. It is as true now as ever, though in a different sense, that Latin and Greek are for scholars and pedants, if we look only to the subject matter of the study pursued. At the same time, it is, for us at least, a serious practical question, whether the mind, or may we say the brain, nursed on classics, is not, after all, a better brain than the best that can be developed by exclusive forcing in the scientific laboratory. To speak frankly, we regard with dismay the growing tendency to discard the older methods of training.

We will give up at once and for ever the plea that classical learning may be turned to practical account; let it be counted as a drug in the market and unsaleable; yet, we contend, no better or more healthy mode of brain-training has been found than that which consists in compelling the youthful mind to such an exercise of its budding powers and faculties as is indispensable in the construing of works in the classical languages, and to express modern thought in the languages of ancient Greece and Rome. We will even go further than this, and dare to affirm that nothing in the whole range of educating work and processes is more directly conducive to the development of a brain strong and well furnished for the scientific study and practice of medicine than the intelligent and diligent study of Comparative Grammar and Logic. The argument employed in disparagement of the ordinary amount of training in classics may be used with equal fairness against any practicable school-training in science. No amount of dabbling in science—a form of mental discipline wholly inadmissible, as we believe, in the case of "clever" boys—will give that solidity of mind-structure, that depth and force and clearness of mind-vision, and that faculty of rapid and precise judgment in dealing with facts and drawing inferences, which are to be gained by fairly honest and earnest labour in the departments of scholarship just mentioned. Neither will we beg the question or try to evade the consequences of the view we take; but assert that, so far from agreeing with those who are striving to eliminate classical languages and classical work from the curriculum of a general and preparatory education, we believe they are pursuing a policy as opposed to that which experience and common sense combine to support, as one which would altogether supersede the natural rearing of chicks by a universal adoption of the artificial incubator. Let advocates of the "advanced" doctrine that knowledge is only useful if it be *itself* of use, pause before they destroy what cannot be restored, lest in abandoning the very principle of a sound education they deprive it of its backbone.

The study of modern tongues cannot, however useful in itself, replace genuine work in the classics. There was a constructive power in the old method which the new wholly lacks. The very fact that a language is spoken by contemporaries renders its acquisition valueless as a process of mental culture. The student of Science who has not been properly grounded in the classics, in mathematics, and in logic is at the mercy of caprice; his judgments are hasty, his processes of mental work are unformulated, his conceptions of law and reason are not definitive, and he is liable to be blown about by every wind of doctrine because he has no solidity, and therefore no stability, in himself. These may appear to be old-world notions, but we are prepared to maintain them on grounds physiological and psychological. In our own profession each year brings new and rapidly changing types of men and manners to the front. The expert scientist is a creature of to-day, and admirable in his place; but no class or development of mind and character which has yet been produced by recent combinations of forces, educational and constructive, will, for a moment, compare with that of the scholarly physician of the last generation but one. If it were only possible to keep the old stock and to graft upon it the excellences of the new, there would be a result not simply surpassing what has gone before, but ensuring a vastly improved and improving type of mental development in that which is to come. Let us maintain the sound classical basis, and afterwards raise upon it those more luminous and brilliant qualities to which the modern scientist so much aspires.

IT is gratifying to know that the financial success of the Health Exhibition has already been such as to relieve its promoters of all anxiety on that score. We can never fully realise the amount of trouble and anxiety which has been incurred in such a cause as this by men whose personal leisure is most scanty. Their enjoyment would be not in favouring a show of the coarser apparatus of sanitation, but in the pursuit of those profound and delicate investigations out of which the highest results for the race and the highest fame for the investigator are to be attained. It would have been grievous indeed if an undertaking in which so many of our foremost men of science and so many leading men in our own profession have taken part had been a huge failure, involving debt, and illustrating only the indifference of the public to that which so greatly concerns them—their health. The financial success of the Health Exhibition happily clears the way for the greater question of what we may call its scientific success. By this we mean not only the projection into the future of the interest in health questions on the part of the public which it has excited, but the elevation of such questions to a higher level of scientific respect. The public must be more than ever impressed with the importance of health questions, and it cannot show its sense of this importance better than by demanding that the profits remaining after all the expenses of the Exhibition have been defrayed

shall, in part at least, be devoted to the support or the creation of such institutions as contemplate the most thorough investigation of the causes of epidemic disease, and the way in which they are propagated from person to person, from house to house, or from country to country. Critics can easily find fault with this Exhibition. They can say that if there were only visible in it something having reference to health it would really be very interesting; that it is only a great show, meant to draw the public and calculated to advertise the wares of enterprising tradesmen; and it must be admitted that the scale of the Exhibition, the crowds by which it is filled, and the entertainments by which they are attracted, give a little plausibility to such criticism. But their objections will be effectually refuted if one result of this show should be the creation of a fund for the establishment of such scientific investigations as are worthy of the country that rules India, and to which JENNER and PARKES belonged. Such investigations are already honoured by the executive of the Exhibition. The instruments and the methods of PASTEUR are fully exhibited in a prominent place, as we have already explained; and there is in a somewhat inaccessible elevation of the building a Biological Museum under the fitting auspices of Mr. WATSON CHEYNE, in which work of the right kind is being done. It is impossible, however, to think without some shame of the much greater honour that is set on such work in Germany and in France than in England, which is so much in advance of other countries as regards public and practical sanitation. It is monstrous to think that in measures for solving the great problem of cholera, for which we have such a special responsibility, we have allowed Germany to excel or to anticipate us. France has made PASTEUR a Senator for his efforts to solve the mystery of epidemic and epizootic disease, and, like Germany, gives public support to bacteriological laboratories and museums. We cannot doubt that one result of the Health Exhibition will be to quicken public intelligence and interest in this question. The most highly civilised nations of Europe, with their huge armies, are painfully at the mercy of bacteria, many of which are so minute that, as Dr. DALLINGER has just told the British Association, fifty millions of them, if laid in order, would only fill the one-hundredth part of a cubic inch. It is these agents that we have to consider; their natural history, their relation to fermentation and to disease; how they can be fostered and how destroyed—in air, water, soil, or food; how they can be rendered innocuous or converted into beneficial vaccine agents. No use of the surplus funds of the Health Exhibition, no result of the Exhibition itself, could be more satisfactory than this. The authorities of the Parkes Museum, who have done so much to promote the success of the Health Exhibition, cannot make a better use of their influence than to make such a representation, and it would be no unfitting reward to them to constitute them the trustees of an endowment for the investigation of all questions bearing on health, from the disposal of sewage to the study of those organisms which, to all seeming, cause those mighty diseases which depress and decimate nations. Another purpose to which part of the surplus funds might very happily be applied is the relief of the pecuniary embarrassment of the London Hospitals. As a means for restoring the health of the people, who have so greatly contributed to the success of the Exhibition, the hospitals are unrivalled. We trust that the Prince of WALES and his colleagues will take both the objects we have mentioned into their most favourable consideration.

THERE are few, if any, surgical appliances which are more universally employed than the many forms of drainage-tubes. CHASSAIGNAC'S original wire tubes have entirely passed away, but their red rubber substitutes or the decalcified birds' bones are to be found in nearly every surgeon's repertoire. However much practitioners differ upon the great question of the dressing of wounds, they seem all to be of one mind as to the value of drainage, and not a few are fond of attributing all the success of Sir JOSEPH LISTER'S scientific and admirable wound treatment to his care in providing for proper drainage. The extreme frequency with which tubes are placed in wounds and sinuses tends in some measure to obscure the special purposes for which they are adapted, and it may be useful, therefore, briefly to recall what it is drainage-tubes can do, and why and when they are useful, as it will enable us to guard against their misuse, which is nearly as common as their employment.

It is well known that one of the chief phenomena in the healing of wounds is the pouring out of serum; this commences as soon as all hæmorrhage is arrested, and continues for from twenty-four to forty-eight hours. We need not stay to consider the purpose or the mechanism of this flow, but it is at once obvious that it is a twofold source of danger in those cases where the surgeon is attempting to secure the primary union of the wound. It may accumulate, separate the surfaces to be united, excite "tension" and suppuration, or it may form a fluid favourable to the cultivation of septic organisms, and so lead to local or general blood-poisoning. The purpose of drainage under these circumstances is evident, and with moderate care it is most easily secured. Tubes of sufficient size should be so placed in the wound as to facilitate the escape of the effused serum, and any part where there is a tendency for it to accumulate or "bag" should be specially provided for.

But now arises a question to which but very little general attention has been given: When and how should these tubes be withdrawn? The correct answer clearly is that as soon as the serous effusion has subsided the function of drainage-tubes is at an end, and they should then be completely withdrawn. We believe we are right when we state that a very common practice is to remove the tubes gradually, shortening them day by day; and then the surgeon finds that, while the rest of the wound heals by first intention, the track of each drainage-tube heals by granulation, or forms a sinus which is more difficult to close up than all the rest of a large wound. There is no difficulty in determining when a drainage-tube has ceased to be of use in a recent wound, for it will appear dry, and dryness of a drain is a certain sign that it is of no further use. To shorten it gradually, or to leave it in the wound at all, is but to manufacture a sinus.

This, however, is but one use of drainage-tubes. They find frequent and most valuable employment in quite other

circumstances, and the different conditions demand other management. For example, in a sinus with a pouched, tortuous, or irregular track, discharge is apt to collect behind some temporary barrier and prevent altogether the growth of granulations that would otherwise take place. If a drainage-tube is introduced into the bottom of that sinus, it guards against this and secures the exit of the discharge from all parts under the influence of gravity, or of the elastic pressure of the surrounding tissues. The surgeon's aim in such a case is to secure the gradual growth of granulations and cicatrisation of the wound from the bottom, and to prevent closure of the wound superficially, or at any intermediate place. A drainage-tube is of use therefore to provide a means of exit of discharge from the deepest part of the sinus, and to allow of the unhindered growth of granulations there, while at the same time it prevents the adhesion of the walls, or closure of the sinus at any intermediate place. It should therefore project almost to the bottom of the sinus, and as the granulations sprout up at the bottom it will require to be shortened. When used in such a case, it would be folly to remove the tube in one piece; but daily, or at longer intervals, it should be shortened to an extent commensurate with the closure of the sinus, until the wound is superficial and the tube can be dispensed with entirely. The skill and experience of the surgeon are well tested by this process of shortening the tube; for if not done fast enough the healing is delayed; while if done too fast, the whole purpose for which the tube is used may be defeated, and the surgeon find, to his dismay, that although he has gradually shortened his tube to *nil*, the sinus is as long as before. The amount and character of the discharge, and the appearance of the granulations lining the sinus, afford some indication of the rapidity with which healing may be assumed to be taking place, and the careful use of the probe will of course render valuable assistance. There are many practical details in the use of drainage-tubes which can only be learnt by practice and careful observation; but we have stated, we believe, the principles which should govern their use in all cases. Where, as in recent wounds, a great and temporary flood of fluid has to be carried out, drainage is only a temporary requisite, and as soon as the flood of serum is stayed the tube should be wholly removed. Where, on the other hand, the tube is used to keep open a sinuous track with flaccid walls, liable to collapse or be compressed, and so occasion retention of discharge in the deeper parts, the shortening of the tube must keep pace with the healing of the sinus. When tubes are used in abscesses, they first of all form an exit for a considerable collection of pus, but so soon as the cavity is empty, and its walls have collapsed, its condition approaches that of a sinus, and the tube must be dealt with accordingly.

Ridicule has in some quarters been thrown upon the very common use made of drainage-tubes, and it has been asked whether fluid will flow through a tube in opposition to the force of gravity. Without undertaking to defend all the uses of tubes, it is only fair to point out that a tube may be of signal service in draining a cavity and sinus apparently in opposition to the force of gravity. Nor is the reason far to seek. The rigidity of the tube being sufficient to maintain an open path for the pus or other fluid to escape, the elastic pressure of the surrounding tissues or the growth of granulations from the bottom of the cavity presses out the fluid. Without the tube, the walls of the sinus or aperture collapse or are compressed together, and additional resistance is afforded to the exit of the secretion of the wound. Absorbable drainage-tubes have not yet been largely used in this country, and their value appears to be limited to those cases in which the first dressing of a wound is not removed until cicatrisation is complete.

IN dealing with the subject of Metaplasia, at the Copenhagen Congress, Professor VIRCHOW must have awakened memories amongst his older hearers of the great service he rendered to science in the enunciation of his cellular pathology more than a generation ago. For although in detail the application of the doctrines he then formulated has with the lapse of time and the advance of knowledge been materially modified, the central facts of cell growth and cell nutrition still largely dominate pathology. In the lucid sketch which prefaced the main subject of his address, Professor VIRCHOW showed how the doctrine of humoral pathology and the large share assigned to an assumed plastic force operating on a blastema from the blood, a doctrine which was fully advanced by HUNTER, and to some extent maintained by ROKITANSKY, came to be modified by the cell theory of SCHWANN, and how the weak point in SCHWANN'S theory, that cells have a *de novo* origin, was overturned by VIRCHOW himself in his enunciation of the law "Omnis cellula e cellulâ." He pointed out that the formative process and the nutritive were not identical, as was assumed in the older view; but that the effect of nutrition was the preservation of cell life, that of formation the multiplication of cells, in which the original cell loses its individuality, and, as such, ceases to exist. The cell theory of nutrition implies the taking up by the cell of material needed for its sustenance, and the casting off by it of effete matter. In other words, it is cell metabolism. But there is also the plastic force, which on HUNTER'S view resided in the structureless lymph or blastema exuded from the blood, but which VIRCHOW transferred to the cell itself, a power exemplified in all processes of growth, and especially in the exaggerated condition of this, to which he gave the name of hyperplasia.

The subject of metaplasia is intimately connected with the processes of normal cell life. It implies a conversion in the properties of tissues, an apparent new production, but yet not affecting the permanence of the cells which are the seat of this conversion. This process is one which has many examples in tissue life, both under normal and morbid conditions. A striking instance is afforded in the process of ossification, where the osseous tissue is formed, not by direct conversion of embryonic cells, but by the metaplasia of a tissue which occupies an intermediate position between the embryonic tissue and the fully formed bone. Whether the ossification take place from cartilage or from membrane, the essential thing is a change in property and function of cells; and the same applies also to the formation of marrow, which goes to make up the whole bone as an organ. The production of marrow may occur in a bone by the latter yielding up its lime salts and the osseous becoming changed into the medullary corpuscles, with softening of the matrix. Thereby a bone may pass into the condition of osteoporosis, or by a

further change, into that of osteo-malacia. Another striking instance of metaplasia is to be seen in the frequent conversion of adipose tissue into mucous tissue—a change which may well be termed a *re*-version, since in fœtal life the fatty tissue is represented largely by mucous tissue. Such a change, seen in the fat of the spinal canal, epicardium, renal hilus, and elsewhere, is not a mere atrophy of the fat, but a real metaplasia, a change in constitution of the fat cells. It can be seen largely in many myxomata and lipomata that exhibit more or less of the gelatinous myxomatous change. COHNHEIM'S doctrine, which relegates all tumour growth to a persistence *in loco* of embryonic elements, retaining the power to develop at any period of life into the tissue for which they were primarily intended, is, in spite of its attractiveness as a generalisation, in VIRCHOW'S view, inadequate for the explanation of many forms of tumour that must take their origin in changes occurring late in life. The idea of metaplasia may be pushed still further, so as to embrace the question whether tissues of one type are capable of conversion into those of another. This is a question to which those who hold to the embryological view of tumour formation find it difficult to assent. They see that the embryo is laid down on definite lines, and that the mesoblastic cells retain their potencies *ab initio*, and can never be transformed into the cells or derivates from the other blastodermic layers. Hence, the sharp distinction between tumours of epithelial type and connective-tissue type; and the difficulties that are sometimes encountered in explaining the origin of a tumour composed of the one type of cells in the midst of tissue of the other type. By accepting the doctrine of metaplasia this Gordian knot would be severed; and Professor VIRCHOW, who throughout—e.g., in reference to cancer—has believed that epithelial formations may originate in connective tissue, does not hesitate to do this, nor to suggest furthermore a conversion of epithelial into connective elements. By a happy antithesis he referred in this connexion to the boundless metaplastic powers which many have assigned to the wandering leucocyte, some going so far as to assert that such cells take a part in the production of every new formation, and capable of conversion into any type of tissue.

The question, it must be confessed, is one which has far-reaching limits in pathology. Indeed, if metaplasia be admitted as possible, and the conversion of one form of tissue into a quite dissimilar form be accepted, much of the foundation of present day oncology will be undermined. At the same time the acceptance of VIRCHOW'S views would do much to explain many an instance apparently anomalous and out of harmony with what has been assumed to be the natural order of things. It may prove that we are too prone to regard the processes of nature as bounded by the rigid limits which we have created for them in our own minds; for it is as true in pathology as in other things, that we are more disposed to accept facts in harmony with our preconceived ideas than to subordinate our ideas to facts. Professor VIRCHOW in this address, thought by some to be dealing with a worn-out subject, shows us the dangers that beset us in thus limiting the operations of nature; and has supplied material for reflection and examination which may do much to revive that interest in cell life that is in danger of being displaced by the more attractive subjects which now engross the attention of the pathological world.

IN selecting as the subject of the Presidential Address in Biology, at the meeting of the British Association, the Phenomena of Pelagic and Deep sea Life, Professor H. N. MOSELEY has, we think, exercised a wise discretion. An important section of the vast materials obtained during the voyage of the *Challenger* has been entrusted to him for identification, arrangement, and examination; and no one is better qualified, by the prolonged attention he has bestowed upon the problems opened up by this voyage, to express an opinion upon the results that have been obtained by it, or to give a general review of the rapid development of our knowledge in regard to ocean life. It is not many years ago that naturalists held animal life in the sea to be restricted to a littoral zone, at the outside from fifty to a hundred fathoms deep. Beyond that depth, it was held, there was total darkness and complete stagnation of water, whilst the pressure became enormous — conditions rendering life, or at least the existence of any of the higher forms of life, wholly impossible. The several expeditions, however, that have been fitted out by our own and foreign Governments have shown that the profound depths of the great oceans are not incompatible with the life of fishes, of holothurians, bright-coloured starfishes, and numerous mollusca, and that, induced probably by conditions of temperature, currents of water sweep along the bed of the sea, cold indeed, but still containing sufficient oxygen to enable aeration of the blood to be effected, and to maintain the various operations of life. From Mr. BUCHANAN'S results it appears that, contrary to what has hitherto been accepted, the presence of free carbonic acid gas in sea water is an exception. As in the blood, what carbon dioxide is present occurs chiefly as a bicarbonate, in general more or less incompletely saturated, and it is owing to this that, as Mr. JOHN MURRAY has shown, after certain depths have been reached pteropod shells are dissolved, and disappear from the sea bottom, and at certain further depths globigerina shells suffer the same fate. The amount of carbonic acid normally present throughout the ocean is not sufficient to be inimical to life, though here and there there are probably large bodies of water highly charged with carbonic acid, owing to the presence of active volcanoes in the ocean bed. In regard to the effects of pressure, M. RENARD has shown that yeast, after being exposed to a pressure of a thousand atmospheres, equal to a depth of 6500 fathoms of sea water, for an hour, when mixed with a solution of sugar, gave no signs of fermentation till about an hour had elapsed, and a mixture of yeast and sugar solution did not ferment at all while actually under a pressure of 600 atmospheres, equal to a depth of about 3900 fathoms.

"Algæ, seeds of phanerogamic plants, infusoria, and even mollusca and leeches, were found to be thrown into a sort of state of sleep or latency by exposure to similar pressures, recovering from this condition after a shorter or longer period of return to normal conditions. A fish without a swimming bladder, or one with the bladder emptied of air, may be submitted to a pressure of 100 atmospheres, equivalent to a depth of 650 fathoms, without injurious effect. At 200 atmospheres, equivalent to a depth of 1300 fathoms, it becomes torpid, but soon revives when the

pressure is removed. At 300 atmospheres, equivalent to a depth of about 2000 fathoms, the fish dies."

These experiments, Professor MOSELEY remarks, are of the highest interest, but of course they labour under the disadvantage that they can only be made on comparatively small quantities of water, so that the oxygen is quickly exhausted, and the fish has no time allowed it to become acclimatised.

"A question of the utmost moment, and one that has received a good deal of attention, is that as to the source of food of the deep-sea animals. Certainly, a large proportion of this food is derived from the life on the ocean surface. The débris of pelagic animals sinks slowly downwards, forming on its passage a sparsely scattered supply of food for any animals possibly living at intermediate depths, but becoming concentrated as it were on the bottom. The pelagic animals depend for their ultimate source of food, no doubt, largely on the various pelagic plants, the range of which in depth is limited by the penetration of sea-water by the sunlight, and probably to an important extent is dependent on the symbiotic combinations of radiolarians with zooxanthella. But a large part of their food supply is also constituted by animal and vegetable débris derived from the coasts, either directly from the littoral zone or by rivers and the action of the tides from terrestrial life..... In the deep sea the ordinary cycle of chemical changes of matter produced by life is incomplete, there being no plants to work up the decomposition products. These therefore, in the absence of any rapid change of the deep-sea waters, must accumulate there, and can only be turned to account when they reach the surface waters on the littoral regions. Many interesting results may be expected to be obtained when the histology of animals from great depths comes to be worked out, and especially that of the special sense organs. At present very little has been attempted in this direction, principally, no doubt, because deep-sea specimens are too precious to be used for the purpose."

Professor MOSELEY, however, describes the remarkable eyes of Ipnops Murrayii, which are curiously flattened out, and occupy the whole upper surface of the mouth.

We have no space to follow the Professor through his interesting speculation on the mode of development of the deep-sea from the littoral fauna, nor of the origin of terrestrial animals from the littoral fauna, of which, mainly on developmental grounds, he entertains no doubt; but we recommend the perusal of the address to our readers as presenting a very valuable *résumé* of a comparatively newly opened field of research from the hand of a master.

DR. BEYER recently read a paper before the Naval Medical Society of Washington, U.S., on the action of carbolic acid, atropia, and convallaria, as experimentally studied, on the heart of the terrapin and frog. With regard to carbolic acid opinions are still at variance as to whether the first action is stimulation of the heart and bloodvessels, thus increasing the blood-pressure, or whether its depressing and poisonous effects are produced at once. HOPPE-SEYLER obtained a rise in arterial pressure just before the convulsions came on, and also a rise in venous pressure, which was even more decided. SALKOWSKY noticed an increase in the rapidity of the blood flow in the capillaries of the frog's web, followed by a slowing of the flow. LABBÉ also observed an increase in the strength of the systole in the early stages of the poisoning, and a contraction of the vessels. On the other hand, RIEDIGER referred to a slowing of the circulation in the web of frogs under the influence of carbolic acid; and GIES found that the lowering in the blood-pressure and the decrease in the pulse-rate occurred almost simultaneously with the introduction of carbolic acid into the circulation, and that after a time the normal pressure and pulse-rate returned. It is well known, also, that the circulation survives the respiration in poisoning by carbolic acid. BEYER has concluded, first, that carbolic acid in small as well as large doses acts as a depressant on the heart from first to last, reducing its rate, its work done, and the blood-pressure; second, that the heart, as long as it is supplied with good oxygenated blood, will, up to a certain degree, show what almost amounts to an immunity from the poisonous effects of the drug; third, that any effects produced by carbolic acid other than depressant are due to other causes, probably to primary stimulation of the respiratory centre in the medulla oblongata. The antagonism existing between carbolic acid and atropia is shown, first, by the fact that after the heart has been carbolised, atropia increases its rate and also its work; second, by the more rapid recovery which takes place after carbolisation under atropinised blood than under normal blood. BEYER believes with H. C. WOOD that atropia must have a very powerful stimulant action upon the intra-cardiac accelerator centres, because after the heart has been completely paralysed by carbolic acid and allowed to recover under atropia, the rate in some of the experiments showed an increase of from 31 to 42 beats per minute. As regards the experiments on the isolated heart of the tortoise and frog with convallaria, the probable conclusions to be drawn from them may be thus stated: It increases the rate and slightly also the work done; raises the intracardiac and aortic pressure; arrests both auricles and ventricle in systole when medium doses are used. Large doses arrest the heart at once. It probably acts directly on the muscular tissues of the heart, and has a decided cumulative action, acting more slowly than digitalis, and being more persistent in its influence. So far as the results of BEYER'S experiments allowed him to judge, convallaria is contra-indicated in advanced cases of heart disease in which the muscular structure has undergone alterations. Convallamarin should be used in preference to any other preparation; not more than one full medicinal dose should be given daily on account of the cumulative action of the drug. It will be perceived that in many of his conclusions BEYER differs from some observers who have preceded him in this particular field of research. The experimental studies were carried out at the Johns Hopkins University, under the supervision of Professor NEWELL MARTIN, and evidently at considerable cost of ingenuity and time.

WE are glad to observe that the Local Government Board maintain their objection to the reduction in the salary of Dr. Angus Mackintosh, which the Rural Sanitary Authority of Chesterfield resolved to carry out, and that they have informed the authority that unless the original salary is paid, repayment of one-half will not be allowed out of the Parliamentary grant.

WE understand that it is the intention of the Local Government Board to institute an inquiry into the cause of the extensive prevalence of diphtheria at Upton Pyne, Devonshire.

Annotations.

"Ne quid nimis."

CHOLERA IN ITALY: "LET ILL ALONE."

STRANGE and pitiful reports are in circulation respecting the epidemic of cholera in Italy. The ravages of the disease have been considerable, but the terror which they have inspired surpasses all reasonable limits. Its most astonishing evidence is the ignorant panic-fear with which the poorer classes regard the simplest realities of medical treatment. At Naples the schools were being disinfected. A cry was raised that the children, healthy children, were to be taken to the cholera hospital. Frantic mothers, without the least occasion, stormed the schools, assaulted and nearly killed the officials, and rescued their children, whom no danger threatened. At Busca the inhabitants refused medical aid and attacked the doctors, thinking that the latter were commissioned to poison them. It would be difficult to say what reason these poor people might give for their vehement opposition to the means devised for their cure. There does not seem to be here any question of the rigour of quarantine. Cholera is an intractable and often a very rapidly fatal disease. Cases of its most malignant form have appeared in Italy. Possibly, its own disastrous course and end have been attributed in such cases to remedies which have been used unsuccessfully, even though skillfully, to arrest it. If so, we have another instance of the frequently fallacious *post hoc propter hoc* view of events. A fair degree of inquiry, a little trouble taken in unravelling causes, with some belief in the good as well as the bad in mankind, are needed to bring the Italian populace and all others to just conclusions in such cases. The manly and sensible conduct of King Humbert and of some of the clergy in visiting and helping the sick is a good omen, and may be expected to beget in the people generally a kindred spirit of cool deliberation.

OMNE VIVUM EX VIVO.

ONE of the lectures at the meeting of the British Association at Montreal which atrracted a large audience was that delivered by the Rev. Dr. Dallinger, who took for his subject the Lowliest and Smallest Forms of Life, as revealed by the microscope. The lecturer, however, did not content himself with a consideration of the structure and functions of the lowest micro-organisms, but made his address the occasion for a review of the question of spontaneous generation. The lowliest organisms lie on the very verge and margin of the vast area of what we know as living. They possess the essential properties of life, but in their most initial state. And their numberless billions springing every moment into existence wherever putrescence appeared, led to the question, How do they originate? Do they spring up *de novo* from the highest point on the area of the not-living which they touch? Are they, in short, the direct product of some yet unrecognised force in nature, changing the dead, the unorganised, the not-living into definite forms of life? Having thus stated the problem, Dr. Dallinger again reviewed the experiments of Tyndall, Bastian, and others. As is well known, Bastian regards vital phenomena as inherent properties of the material called protoplasm, just as magnetism is the appanage of a magnet; so that if a chemist were able exactly to imitate protoplasm by combining the various ingredients in due proportion, and under necessary conditions, the resulting mass would exhibit all the essential phemonena of life. Carried to its logical conclusion, the argument of the supporters of archebiosis amounts to this: That life can be created out of inanimate forces. The champion of spontaneous generation would say: "I can manufacture uric acid out of less complex materials; the properties of substances depend on their molecular structure and condition. Why should I not be able to make protoplasm?" He recognises no hard-and-fast line between the living and the not-living, the organic and the inorganic. The corrosive action of hydric chloride, the explosiveness of gunpowder, are merely functions of the substances bearing these names; life is a function of the substance called protoplasm. "You can manufacture gunpowder, why not protoplasm?" These are the thoughts which agitate the minds of men like Bastian and others. However, it is not by thought, but by actual experience or experiment, that such important questions are to be solved, and the majority of scientists have decided that when experiments are carried out with requisite skill, as appears to have been done by Tyndall, no life appears in sterilised flasks containing dead matter. The law is as ever: only the living can give rise to the living.

THERMIC DYSPNŒA.

THE mode of action of heat in increasing the frequency of respiration has received different explanations at the hands of various authors. Ackermann, Goldstein, and others have explained the respiratory acceleration as due to warming of the central nervous system. M. Sihler has supported the doctrine of a reflex action, the afferent surface being the peripheral cutaneous nerves. M. Ch. Richet has recently communicated the principal conclusions at which he has arrived to the Académie des Sciences. When a dog has been tetanised by repeated strong electrical shocks, the temperature of the animal is elevated and the rate of respiration is increased. As soon as the temperature has passed beyond 40·5°C. (104·9° F.), the respiratory rhythm is accelerated to 200, 300, or even 340 respirations per minute. From this experiment Richet concludes that thermic dyspnœa may be of central origin and due to the heating of the blood and nervous system. But Richet also believes in a reflex thermic dyspnœa, as he appears to prove by placing dogs in a warm stove, the temperature of the internal viscera remaining normal when the atmosphere of the stove is 38°, the respiratory rhythm being raised to 300 or more per minute. This reflex thermic dyspnœa is not observed in man, in whom the skin is more fitted for transpiration. Richet has found that a muzzled dog soon became feverish when placed in a warm stove—e.g., the stove at 39°, the temperature of the dog became 42° in an hour. Even tracheotomy and the use of a cannula in a muzzled dog did not prevent the onset of a marked pyrexia, and the animal died asphyxiated; hence normal respiratory movements are insufficient to support life when a dog is placed in a hot medium. Chloral in an anæsthetic dose, abolishing all the reflexes, does away also with reflex thermic dyspnœa; the chloralised dog placed in the hot chamber, being unable to breathe faster, becomes overheated and dies. Morphia, even in large doses, does not prevent the respiratory acceleration. In order that the inspirations may be increased in frequency, it is necessary that the trachea be largely opened, so that there is no resistance to free inspiration and expiration, whereby the tension of carbonic acid in the lungs may be reduced. If the surcharge of carbon dioxide be too great, respiration becomes deep and slow. Then there is an asphyxial dyspnœa characterised by slow and deep inspirations, whilst the thermic dyspnœa is marked by rapid and superficial inspirations. Though chloral gets rid of the reflex thermic respiratory acceleration, it is powerless over the thermic dyspnœa of central origin. No reflex excitation seems to be able to prevent the occurrence of the central form of dyspnœa, whilst the reflex form appears to be under the control of the will, and of all peripheral stimulations—e.g., cold water affusion. The central form is said to persist, even after the temperature has returned to the normal; the

respiratory centre in the medulla not having lost its newly acquired rhythm, though cold water applications are then able to restore the natural rhythm.

STRANGE VIEWS OF A CORONER ON UNNECESSARY INQUESTS.

WE hope that the attention of the Registrar-General has been called to the peculiar views of Mr. Carter, Coroner for East Surrey, on the course to be pursued when children die without medical attendance. The subject of the inquest was a child aged two months, which had wasted away to a shadow. The coroner spoke in terms of blame to his officer, and asked what occasion was there for holding an inquest. The officer, Mr. Wells, replied that the deceased had not been medically treated, and the registrar for the district refused under the circumstances to register the death. The coroner remarked that it was a great shame the county should be put to such an expense in holding unnecessary inquests. If the registrar refused to register such deaths, it was the duty of the officer to report the same to the presiding magistrate at the nearest police-court in the district, and he would make an order compelling the registration. The officer replied that he could not compel the registrar to do that which he refused to do, and the matter dropped, a verdict of death from natural causes being returned. The coroner in this case seems grievously in the wrong. Can there be a more fit or useful case for an inquiry than one where a child is allowed to waste to a shadow without medical attention being called to it? Secondly, what is the coroner's ground for saying that when the registrar refuses, as in this case he most properly refused, to register a death, the duty of the officer was to apply to a police magistrate? We are astounded at such a doctrine, and at the attempt to throw on police magistrates, who have enough to do, one of the most obvious and urgent duties of coroners.

PUERPERAL SEPTICÆMIA.

THE previous workers in this field have been both numerous and celebrated, yet the question of the nature of the virulent agent of puerperal septicæmia has not been definitely settled. M. Arloing, whose name is well known in connexion with bacterial studies, has recently communicated a valuable paper to the Société des Sciences Médicales de Lyon, of which we propose to give a *résumé*. M. Arloing's attention was first given to the microscopical nature of the lochia, blood, and peritoneal serosity of women. Besides the epithelial elements and pus-globules in the lochia, punctiform micro-organisms were discovered, either isolated, arranged in pairs, or in short chains. Similar micrococci were seen in the false membranes and pus of the peritoneum in fatal cases. The blood contained a few similar organisms, but much more minute and difficult of investigation. Inoculations were performed with the purulent fluids into the peritoneum of rabbits, white rats, guinea-pigs, dogs, fowls, and ducks, but only the first-named animals succumbed. Rabbits have also died when the inoculation was made into the veins. Artificial cultivations of the puerperal virus have been made in a beef bouillon at a temperature of 35° C. in the open air, at normal pressure, as well as in an atmosphere of carbonic acid and *in vacuo*. Rabbits inoculated with cultures which had been raised to a temperature of 43° C. lived a much longer time than usual, and in some cases recovery even followed; where this was the case the animals were found to be protected against fresh inoculations. The following statements are worthy of consideration. If the rabbits were inoculated with very active virus cultivated *in vacuo*, they died with all the signs of septicæmia, but without suppuration. If the animals were full grown, and inoculated with the same agent cultivated in air, the disease progressed more slowly, and the lesions of fibrinous peritonitis were produced. Finally, if the virus were weakened by culture in an unfavourable medium, the disease evolved still more slowly, and suppurative inflammation of the serosæ took place. In all cases the same microbe was to be detected. The main conclusions arrived at were two in number: first, that the different forms of puerperal septicæmia are all due to the action of one living poison; secondly, that this micro-organism is unique, but has not been proved to be special to the puerperal state. It must be remembered that the puerperal period realises the conditions favourable to the introduction and evolution of the micrococcus in the human organism.

THE DRESS OF WOMEN AND CHILDREN.

DRESS is a thing more variable than the changes of season, which it is supposed to follow, and opinions upon it are infinitely more varied than its forms. With reference to this subject, taste has long existed as a mere sense not much affected on the whole by mental processes. Of late a change has come about; it has multiplied and strengthened its connexions with the intellect, and is giving forth judgments and laws of clothing founded on the teachings of physiology. An effort in this direction is embodied in a paper by Mr. Francis Vacher on the rational dress of women and children. It contains some serviceable hints as to the clothing of infants, particularly where it aims at shortening the inordinate length of skirt in which their lower limbs are usually entangled. The use of woollen underclothing at this and all ages is another point which receives a just recommendation. The author certainly enters on debatable ground when he insists that children at a later age should be warmly clad from neck to toes, with no part of the body exposed save the head and hands. He seems in this part of his paper to violate his own principle by carrying into active childhood the swaddling system which he condemned in infancy. There can be no valid objection to letting even young children go about with bare knees and forearms, as one commonly finds they do, provided that they have been accustomed to this degree of exposure from infancy, and have the rest of the body comfortably covered. With regard to the special dress of womanhood, Mr. Vacher has fairly earned the thanks of thoughtful members of the female sex by daring to substitute for the conventional corset a closely fitting under-jacket. The corset, with its stiffness and its "shapeliness," however it may be modified, is an untruth against nature, which can only be remedied by being done away with. An essential point is the distribution of the weight of clothes. Every physical necessity requires that this pressure should fall upon the arch of the shoulder or pelvic bones, and not, as we now find, upon a dress-girdle more or less tightly drawn round the middle of the body.

SMALL-POX AT THE CAPE.

ACCORDING to the *Port Elizabeth Telegraph*, the medical commission appointed to visit the lazaretto of the combined Mining Boards of Dutoitspan and Baltfontein has submitted its report to the Board of Health. The report states that twenty-nine bodies were found outside the building, eleven of them having been dead for three days, on all of which the characteristic small-pox eruption was apparent. The lazaretto consists of three separate wards. To the convalescent ward, the floor of which was as nature made it, there was no door, and the patients lay on the ground without mattresses, and with only one blanket each to cover them. In the other two wards the patients were much overcrowded, the floors were in a filthy condition, there was no chimney to allow the smoke to escape, and the sleeping arrangements were similar to those prevailing in the con-

valescent ward. No other food but flesh, bread, or porridge was given, and those patients who were unable to fetch the food from the doors, where it was deposited by the attendants, were compelled to do without. No medicine was, it is stated in the report, given. Two natives acted as nurses; the night-nurse, having during the night preceding the visit of the commission got drunk, left the doors open, and allowed several delirious patients to escape. In answer to an inquiry, it was stated that "the doctor never entered the wards, only looked in at the doors; his work was 'to skin the man'—i.e., to make post-mortem examinations." There was no fumigation or disinfection of clothes, and the thirty-seven convalescents discharged were actually allowed to depart in the very garments they had worn during their illness. There is no latrine system, consequently the excreta of those who were able to go outside was deposited within seven paces of the wards, and remained uncovered; those who were unable to walk or crawl outside had to, and actually did, relieve nature where they lay. In reply to the report of the medical commission, Dr. Wolff argues that, with the means at his disposal, he did all that could be done for the unfortunate patients, and denies that there was neglect or wrong treatment. To reconcile these statements is difficult.

SUICIDE IN THE LIVERPOOL WORKHOUSE ASYLUM.

A CASE of suicide has occurred in the Liverpool Workhouse Asylum. The unhappy man was a German captain, thirty-five years of age, who had attempted suicide before his admission by cutting his arms. At the inquest it was ascertained that he was generally a sober man, but that since his derangement he had taken to drink rum in large quantities. The workhouse attendant's evidence, reported in the *Liverpool Courier*, is as follows. He deposed that he received the deceased on Thursday night last. He was then told by the German vice-consul, who accompanied the deceased, that the latter had attempted to commit suicide by cutting his wrists. From what the vice-consul said, witness placed the patient in a room by himself. The man had some tea shortly after his admission, and at 10 o'clock the same night witness visited him, when he said he was all right. About eleven o'clock the next morning a doctor saw the deceased, who remained quiet until Saturday morning, when he became restless and wanted to go home. The doctor again visited him at 11 o'clock on Saturday morning; and as he a little later was very noisy and violent, witness reported it to the doctor, who ordered him to be secured in a padded room, which order was at once carried out. Witness as usual took him his tea at half-past four, but deceased would not eat anything, and only drank some tea. He saw the man again at 6 o'clock, and also at 10 o'clock, this being the last time when he saw him alive. At 5 o'clock on Sunday morning witness saw the deceased, dead. He had taken the bandages off his arms, tied them together, and then strangled himself. Richard Davies, an old man, who said he was the night attendant at the workhouse asylum, stated that he heard the deceased walking about in the padded room up to 12 o'clock on Saturday night, and as all then became quiet he concluded that the man had gone to sleep. At half-past four on the Sunday morning witness looked through the glass in the door of deceased's room, and saw a leg and a foot behind it. Upon opening the door he spoke to the deceased, but obtained no reply. On looking up he noticed the deceased's bandage over the corner of the door, and having cut the bandage he found the other end of it tied round the man's neck, who was in a sitting posture and quite dead. At the inquest the deputy coroner reflected on the medical treatment, and thought that more might have been done for the patient. The jury adopted this view, and expressed the opinion that there had been gross neglect on the part of the officials and of the doctors. The guardians have since had this verdict under their consideration, and have acquitted the medical men and other officials, and expressed the opinion that everything possible had been done. The occurrence of a suicide in a public institution is certainly unfortunate. It is the more open to criticism when, as in this case, the officials have been distinctly forewarned by a serious previous attempt. We certainly think that more effective vigilance should have been exercised by the attendants, and that on the night of admission the medical officer should have been summoned to see the case. It is monstrous, too, that an old man should be night attendant for such cases. We cannot share the opinion that the coroner seems to have expressed, that blisters and other medicines would have much availed to prevent the sad accident.

LONDON WATER-SUPPLY.

DURING 1883 Messrs. Crookes, Odling, and Tidy examined at the expense of the water companies 2224 samples of water collected by them from the mains and reservoirs of the seven London companies taking their supply from the Thames and the Lea. The proportion of samples free from recognisable ammonia amounted to 82·7 per cent. of the whole, the percentage in 1882 being 70·9, and in 1881 60·6. There has been also a successive gradual yearly diminution in the proportion of organic matter present in the Thames-derived water supplied to the metropolis, and this diminution is attributed by the examiners to the continuously increased efforts made by the water companies to improve their filtration and subsidence processes and arrangements. The quantity of nitrogen found ranged from about 0·150 to 0·225 of a grain per gallon, the quantity being on the average somewhat lower in the summer and autumn than in the winter and spring quarters. The quantity of chlorine amounted throughout the year to either close upon, or a little over, one grain per gallon, corresponding to about one and three quarters of a grain per gallon of common salt. As the examiners remark, it is satisfactory to note that at periods of summer heat and drought the natural agencies at work to keep down the proportion of organic matter existing in the water of the river are in their maximum of activity. It results in this way that the water-supply of London is at its best at those seasons of the year when any failure in the quality of the supply might be considered likely to be of exceptionally serious import.

PENNY DINNERS FOR SCHOOL-CHILDREN.

THE penny dinner movement is extending. Prosperous accounts are given of its establishment in Gateshead by the Rev. Mr. Ede. His statements make it clear that there is need for some such provision for ten to twenty per cent. of the Board School children whose parents cannot or will not themselves feed them regularly. Payment is, on the whole, punctual, and the scale on which the system is worked allows of a surplus sufficient to pay for cooking expenses after the first outlay on the purchase of apparatus, a very moderate sum, has been met. It is found that there need be no stint in order that every child may enjoy a dinner and have enough. In very necessitous and selected cases where even the penny cannot as a rule be paid, charity is resorted to. Under the circumstances this appears but natural, seeing that education is compulsory, and that unless food be sufficient its benefit must often be overbalanced by injury to health. The dietary, so far as it goes, leaves little to be desired, price being considered. It is framed in recognition of the value which fats and amyloids possess as foods,

especially in childhood. The share of meat proteids in nutrition is not, however, forgotten. Ox-head soup with bread and various substantial flour puddings may be quoted as examples. Many simple dishes could probably be contrived on the same plan as these. No doubt variety will come with experience. The success of this thrifty experiment in cookery is a matter for general congratulation, and shows how much can be done by the skilful combination of common-sense with a good purpose and very scanty means. The hint may be worth the attention of many of all ages and occupations who have now to pay well in order to fare badly.

CHOLERA MIXTURES OF THE GENERAL BOARD OF HEALTH.

SEVERAL inquiries have reached us as to the ingredients of a mixture which the General Board of Health recommended on Oct. 5th, 1848, as efficacious in dealing with the premonitory diarrhœa of cholera, and as generally applicable to looseness of the bowels during the prevalence of cholera. Two alternative mixtures were embodied in the circular which the Board issued at that date. One prescription recommended was "seventy grains of opiate confection, mixed with two tablespoonfuls of peppermint water, or with a little weak brandy-and-water, and repeated every three or four hours, or oftener, if the attack is severe, until the looseness of the bowels is stopped;" the other, "an ounce of the compound chalk mixture, with ten or fifteen grains of the aromatic confection, and from five to ten drops of laudanum, repeated in the same manner;" and it is added that "from half a drachm to a drachm of tincture of catechu may be added to this last if the attack is severe." It was further recommended that half these quantities should be given to young persons under fifteen, and still smaller doses to infants. But, perhaps, the safest portion of the recommendation issued by the General Board of Health was that in all cases, where this is practicable, even in the earliest stages of the disorder, recourse should be had to medical advice on the spot.

ALCOHOLIC DISEASE IN CHILDREN.

ONE of the most painfully interesting communications at the recent meeting of the British Medical Association was by Dr. T. M. Madden, Physician to the Hospital for Sick Children, Dublin, on Alcoholism in Childhood and Youth. Dr. Madden testified that many such cases came under his view. He gave particulars of a case of marked delirium tremens in a boy aged eight. His mother was a drunkard, and he, at the age of six, on discovering a secreted bottle of whisky, showed the hereditary tendency to follow her example. Before admission into the hospital with delirium tremens he had obtained access to a bottle of port wine and almost emptied it. He nearly died from coma, and, delirium tremens supervening, he was taken to the hospital. Boils followed, and he remained weak in mind and body for nearly a month. He was then sent to a reformatory, and recovered. A second case of juvenile alcoholism in a newsboy, aged eight, was the son of a drunken mother. He was sent for his mother's whisky, and was rewarded with a sip. Dr. Barlow of London followed with some powerful facts as to infantile alcoholism, gathered from his experience in the Children's Hospital, Ormond-street. He had seen the evil effects of small doses of gin given to babies at the breast for flatulence. He had also found it customary to give quite young children among the poorer classes a daily quantity of beer. He had seen two or three cases of well-marked typical cirrhosis, with a little ascites, from this cause. He detailed one very striking case —the child of an apparently healthy mother, able to suckle it, and in fair circumstances. From six months old the child was given a tablespoonful of beer twice daily, and from nine months old a teaspoonful of gin in as much water daily. The child died, and was found to have one of the most typically hob-nailed livers Dr. Barlow had seen. Dr. Barlow properly added that he had seen hob-nailed liver in children where it was not possible to have alcohol. Dr. B. O'Connor bore similar testimony. These are appalling facts, which give great force to the warning of Dr. Madden and Dr. Barlow as to the responsibility of prescribing alcohol to children.

THE LATE DR. BALFOUR OF BOMBAY.

SOME weeks ago it was our painful duty to chronicle the sudden death of this medical practitioner, which took place in Bombay. We have recently been favoured by Dr. R. Blaney of that city, who attended the case, with some particulars regarding the illness, from which we glean that Dr. Balfour had been ailing for some time past, and that, to use the words of our correspondent, "he seemed to have been suffering from symptoms of incipient general paralysis for some little time before his death." We also learn that, under the advice of another medical friend, he had been taking strychnine, and on the day on which the fatal apoplectic seizure supervened Dr. Balfour was very unwell, and confined to his bedroom. He never rallied from the attack. Dr. Blaney, having been called in at 1 A.M., stayed with his patient until he died, three hours after the arrival of the former. "The little I was able to do for him," he tells us, "was of no avail, as he was beyond human aid. His death was very sudden, and was a great shock to all his friends here."

CONFERENCE ON CHOLERA.

THE Epidemiological Society recently held a conference on Cholera at the International Health Exhibition. As was to be anticipated, the controversy elicited the most opposite opinions. Sir Joseph Fayrer and Dr. Lawson argued strongly in favour of the non-contagiousness of the disease, whilst Brigade-Surgeon Scriven brought all his force to bear against this view. Dr. Scriven was, however, no supporter of quarantine. Medical inspection, surveillance, disinfection of ships, and burning of infected clothing were the chief preventive measures advocated by him. Taking the whole mass of scientific men, Dr. Scriven thought "the anti-contagionists would be found to be a very small proportion; but in England and in India, if they were a small minority, they were a very influential and very active minority—active, not in the suppression of cholera, but in the propagation of their own views." Another opinion for which he contended was that sporadic cholera was of exactly the same nature as epidemic cholera, just as sporadic small-pox resembled the epidemic disease. *Nulla falsa doctrina est quæ non permisceat aliquid veritatis.*

CULPABLE CARELESSNESS.

AT Melbourne, on July 4th, a coroner's jury returned a verdict of manslaughter against Dr. Günst, jun., a homœopathic practitioner of that city, as the result of an inquiry into the death of a young woman whom he had professionally attended. The patient complained of pain in the ear, deafness and sleeplessness. For this latter Dr. Günst wrote a prescription ordering ten grains of hydrochlorate of morphia and five grains of quinine to be mixed in a powder and "to be used as directed." The chemist to whom the prescription was taken concluded from the strength of the dose of morphia and the fact that the powder was to be *used* as directed instead of to be *taken* as directed, that it was intended for external application. This, however, was not the case. The unfortunate young woman swallowed the entire powder, and death resulted in an hour. The explanation given

by Dr. Günst was that he intended to write a homœopathic prescription, and that he omitted to put in signs recognised in homœopathy which would totally alter the character of the powder. He omitted to place before the quantities of the drugs signs indicating one-twentieth, and the effect of this neglect was that the patient got twenty times as much morphia as he intended; in other words, the ten-grains placed opposite the morphia was designed to apply to a preparation containing one part of morphia to nineteen parts of sugar of milk. The jury returned a verdict to the effect that deceased had come to her death by taking an overdose of morphia prescribed by Dr. Charles Werner Günst, jun., against whom, as previously stated, they found a verdict of manslaughter. The luckless homœopath was committed for trial, being, however, admitted to bail.

THE BRAIN AND PHOSPHORIC ACID.

THE peculiar associations suggested to exist between mental action and the use of phosphorus have been a favourite theme with many physiological chemists. Recently M. Charcot communicated a work by M. Mairet to the Académie des Sciences. The latter gentleman believes that phosphoric acid is intimately associated with the nutrition and action of the brain. In working, the cerebrum is said to absorb sodic and potassic phosphates, and to give out phosphoric acid combined with an earthy base. Intellectual work is believed to retard the general nutrition. Mental exercise modifies the elimination of phosphoric acid by the urine; it diminishes the proportion of acid in combination with alkalies, and increases the earthy phosphates.

CASE OF REPORTED CHOLERA AT KILMACTHOMAS.

DR. BRODIE states, in a recent report to the Local Government Board for Ireland, that the death of the stowaway lately admitted into Kilmacthomas Union was not, in his opinion, an example of Asiatic cholera. On the other hand, Dr. Martin, of Portlaw, who has had large experience in the epidemics of 1832, 1834, and 1849, asserts most positively that Kennedy died from the disease in question. It is probable that Dr. Martin will shortly publish the particulars of the case.

AN IRISH VETERINARY COLLEGE.

DR. LYONS, M.P. for Dublin, who has taken considerable interest in the formation of a Veterinary College for Ireland, has again drawn attention to the subject. It appears that the Irish Executive wish to subordinate the proposed institution to the English College, while the most earnest promoters of the Irish College consider it an essential point that it should be independent and capable of conferring a diploma of its own.

CURE FOR SCIATICA.

A REMEDIAL agency not commonly resorted to has been recently brought under notice by M. Debove for the relief of neuralgic sciatica. This physician seems to have met with considerable success in the treatment of sciatica by freezing the skin. Richardson's ether spray not proving satisfactory, M. Debove employed the chloride of methyl, which may give rise to a degree of cold represented by −23° C. This agent has the advantage of not being expensive. A jet of the fluid is made to play on the skin along the whole length of the limb corresponding to the course of the sciatic nerve and its main branches. The good effects are said to be instantaneous. The operation is also claimed to be but little painful; the smarting is not so great as that caused by the hot iron. Vesication has followed the employment of this remedy, but never any sloughing. The extension of this measure to other neuralgiæ is advocated.

HOSPITAL SATURDAY.

IT is gratifying to see many indications of earnestness in the promoters of the Hospital Saturday Fund, and especially so to notice that the main and most important branch of the Fund—the weekly small contributions of working men—are receiving more attention. Not till the working classes realise how easy it is for them to give such contributions, and how much they owe to the hospitals, will the Fund be worthy of them or of the cause.

BRITISH residents and visitors at Geneva have addressed a requisition to the British Consul that a meeting may be called to protest against the statements made by certain newspaper correspondents as to the sanitary state of the city and the existence of Asiatic cholera therein.

DR. CHARLES, of the Bengal Army, has medical charge of the Afghan Frontier Commission.

SUTTON, in Cheshire, is suffering from what appears to be a severe outbreak of typhoid fever.

THE INTERNATIONAL MEDICAL CONGRESS AT COPENHAGEN.

(From our own Correspondent.)

(Concluded from p. 384)

ON Thursday, the 14th ult., in the Section of Surgery, Professor Macewen read a paper on Osteotomy for Genu Valgum. Professor Ogston said that he had given up performing this operation in the way he himself had originally recommended, and now used Macewen's method. Professor Chiene stated that it was now adopted by nearly all surgeons, and congratulated Professor Macewen upon being the inventor of this valuable method of operating. On the same day the discussion on Antiseptic Treatment was opened by Professor Esmarch (Kiel), who recommended his "Danerverband," the advantage of which is that besides being aseptic it keeps the wound perfectly quiet. Professor Esmarch pointed out that it was necessary, before dressing the wound, to carefully stop the bleeding, to provide for free drainage of matter, to be cautious in the use of the antiseptic, to employ good absorbent dressings, and to keep the wounded part quiet. Professor von Mosetig Moorhof (Vienna) recommended iodoform strongly as an excellent dressing for all kinds of wounds. He had never seen any fatal case of poisoning, but would utter a warning against using other antiseptic means, especially carbolic acid. Dr. Schede (Hamburg) spoke highly of the treatment of wounds by sublimate, his experience being based upon a very large number of cases. He had first used carbolic acid, which for some time yielded good results, but as, later on, various circumstances, such as bad drainage, the neighbourhood of the dissecting room, &c., had proved unfavourable, he had been forced to abandon the antiseptic treatment with carbolic acid. He had then tried iodoform, but had had sad experience of its dangerous nature from the occurrence of erysipelas. Dr. Schede was astonished to hear that von Mosetig Moorhof had not as yet seen any fatal cases of poisoning, as that was quite contrary to other surgeons' experience. Since he had used sublimate he had met with great success. Dr. Mikulicz (Cracow) recommended iodoform gauze (30 to 50 per cent.) for wounds in cavities lined with mucous membrane. He did not powder the wounded surface with iodoform, but simply filled the whole cavity with iodoform gauze, never omitting the usual antiseptic precautions, and left the gauze *in situ* for from

six to ten days. The advantage of this dressing was that the gauze kept the wound quite antiseptic; even if saliva, urine, &c., passed through it, it produced no irritation whatever, and the discharge was slight and without fetor. He had only seen cases of poisoning where there were larger absorbent surfaces, but none of these had proved fatal. The discussion was continued by Professors Trélat (Paris), Neudörfer (Vienna), Buchanan (Edinburgh), the last recommending pure Listerism, and Kœberlé (Strasbourg), who spoke against all antiseptic treatment, considering that the principal point was cleanliness. Finally, the President, Professor Plum (Copenhagen), gave a summary of the development of the antiseptic treatment in Denmark, which was one of the countries where the Listerian treatment had first been adopted; lately the German modification had been much used. The President pointed out the great benefits Lister had conferred upon surgical science and upon mankind. The large assembly rose to testify their sympathy.

In the Hygienic Section, Dr. Dutrieux (Alexandria) read a paper on the Cause of Cholera in Damietta, a theme which gave rise to a lively discussion.

On the evening of the same day the municipality of Copenhagen gave a dinner in honour of the Medical Congress, at which fourteen hundred persons were present. As the town contains no hall sufficiently large to dine so many persons at once, a beautiful wooden building was erected for the occasion. Decorated with bunting, flowers, and evergreens, and situated between the charming "Lange Linie" and the blue waters of the Sound, the dining hall seemed worthy even of the distinguished guests it was to contain within its walls. The side towards the sea was almost entirely constructed of glass, so that the guests had a splendid view of the harbour, covered with ships from all nations, all decorated with flags in honour of the occasion. During the dinner large steamers passed within a few yards of the building with enthusiastic crowds on board, waving their welcome to the foreign guests. After dinner the party was conveyed in three steamers to the well-known gardens of Tivoli. This short voyage might be almost called a triumphal procession, the shores, the boats, the very riggings of the ships being alive with an excited and applauding multitude. Tivoli itself was brilliantly illuminated, and the evening terminated by a gorgeous display of fireworks.

On Friday, the 15th, Professor Virchow read his paper on Metaplasia. The Professor commenced by giving a summary of the different hypotheses of the several life processes during the first half of the present century; until about thirty years ago he offered the proposition *Omnis cellula e cellulâ* as the basis of a new theory. He then described the different forms of cellular processes which this new theory had by degrees taught us to distinguish, and amongst these he dwelt particularly upon metaplasia. By metaplasia Virchow understands the vital process which tends to organic change of the cells by producing new forms of tissue. The essential feature of this process is that the cells remain while the character of the tissue changes. Metaplasia is the basis of important pathological processes, without being itself pathological in nature; on the contrary, it is entirely a physiological process. In ossification we have a good example of metaplasia. Ossification never takes place in the original cells of the fœtus, but these first form a transition tissue, and, from this, by metaplasia, the bone tissue is constructed. Another example is the marrow, which to a great extent is formed by metaplasia of the bone cells. Next to the bone tissue comes fat as most subject to metaplasia. Most frequently it is converted into mucous tissue. Thus one may see the whole layer outside the meninges spinalis transformed into a gelatinous mass, which process is often called colloid degeneration. The same change can occur in lipomatous tumours, either partially or totally, the result being that they take the character of myxomata. As another example of metaplasia as the basis of a pathological change, Virchow named the enchondromata, which are developed from small pieces of cartilage that become loosened during ossification. Whilst Cohnheim thought that these and similar tumours always had their origin in fœtal formations, Virchow considered them as a rule to arise at a later period. Lastly, he dwelt upon the possibility of cells belonging to different classes of tissue changing by metaplasia into each other.

In the Surgery Section, on the same day Mr. Thornton (London) read a paper on Nephrotomy and Nephrectomy. Mr. H. Morris (London) and Mr. Bryant took part in the discussion which followed, the latter considering that Mr. Thornton had performed nephrectomy in cases where nephrotomy would have proved satisfactory.

In the evening, the King, as patron of the Congress, entertained the members at the palace of Christiansborg, the whole of which was thrown open to the guests. The King, Queen, and other members of the Royal Family conversed with the more distinguished guests, and in every way showed their interest in the progress of science. A supper was served in the great dining-hall and the adjoining rooms, all being one blaze of light.

On Saturday, the 16th, in the united sections of Diseases of Children and State Medicine, Professor Malling Hansen (Copenhagen), Director of the Royal Deaf and Dumb Institution, read a very interesting paper on the Normal Increase of Weight during Later Childhood. The paper was illustrated by tables. He showed how in many countries careful investigations had been made on the influence of nourishment on the growth and development of the human body. The value of these investigations was lessened by the facts that, as a rule, the children subjected to the inquiry were too few in number, and were only weighed during a short period. To prove the untrustworthiness of individual weighings, the speaker quoted the investigations made in Germany upon children who, during the summer, were at the so-called holiday colonies. Professor Hansen adopted the following method:—The 130 children of the Deaf and Dumb Institution are from nine to sixteen years of age; they were divided into eight classes according to their age, and each class was weighed separately every day on a centesimal weight, besides each individual was weighed once a month, and the result of these single weighings was used to correct that of the class in case any child should have been ill or absent. In this way the boys were all weighed every day at 6 o'clock in the morning and at 9 in the evening; the girls were only weighed once a day, at 2 P.M. Some of the most interesting results obtained were the following:—A child might weigh from 1 lb. to 2 lb. heavier at night than in the morning, and be upwards of 1½ lb. lighter in the morning than it was the evening before. From one evening to the next a child might increase 1 lb. or decrease ¾ lb. These results, which concern normal children, proved how unreliable the results must be when the intervals between each weighing are longer than twenty-four hours. Exercise, bathing, &c., did not seem to have much influence upon the weight; whilst, as regards eating, there was always an increase after a full meal. The speaker then proceeded to say, that during the year there seemed to be three periods in which a child's increase in weight varied: first, a period of decrease from the middle of May in each year to the middle of July; a period of increase of great importance from the middle of July to the middle of November; and then a period during which the child increased slightly but often remained stationary and might even lose in weight, from the middle of November to the middle of May. Altogether a child's increase in weight is limited to from one-fourth to one-fifth of the year, the rest of the time showing either loss of weight or compensation for loss. Besides the fixed periods of decrease there were often, even during the increase periods, sudden stoppages, lasting from six to fourteen days; after such a period the increase was sometimes greater than usual, but the stoppage was never thoroughly compensated for by the following increase. The frequency of this increase and decrease seemed to depend upon changes in the temperature, increase in temperature being accompanied by increase in weight and *vice versâ*, decrease of weight following rapid decrease of temperature often being considerable and of long duration. A great difference in the appetite was noticeable in the various months and even weeks, but with great regularity, the appetite being greatest in March and least in January. The boys ate one-fifth more than the girls, although the latter often increased more in weight. From the daily weights taken at the Royal Danish Deaf and Dumb Institution, it was shown that diet arranged after the latest scientific ideas was a failure. Professor Hansen concluded by saying that these mass weights taken in a number of institutions in all countries would be one of the best means of finding the nutritive value of various foods during a longer period. This paper, which was listened to with great interest, was much applauded, and gave rise to various remarks. The honorary presidents, Professors Rauchfuss (St. Petersburg) and Jacobs (New York) laid great stress upon the novelty and importance of these investigations, but they remarked that there was danger in considering that increase in weight

and fat and increase in health and strength were synonymous. To this Professor Hansen replied that it was hardly probable that a child could increase in health and strength without increasing in weight, and at the same time a child which continued to lose in weight must also lose in strength.

Professor Panum at the general meeting read a paper on Investigations of Food Rations for Men in a State of Health and of Disease, especially in hospitals, infirmaries, and prisons of different countries. He said that the investigations which had been made in the chemical composition of food were not widely enough known. It was not often that physicians were met with who had sufficient knowledge on this subject. He even feared that medical men who sanctioned diets for hospitals and like institutions often had not made the necessary investigations into the composition of the various aliments. This knowledge had been recognised as one of the principal branches of medicine, yet diets for the sick were too often based on old-world opinions. There were many points still disputed, but the principal facts were settled. No one would dispute the fact of the existence of nitrogen and carbon in food, and that it must contain both in larger quantities than leave the body in order to make up for those parts lost in the preparation. The speaker then drew attention to the investigations which had been made on the increase or decrease of the body in consequence of the supply of a sufficient or insufficient quantity of nourishment. He showed that the quantity of nitrogen given off in the urine was the same—supposing the quantity of albumen taken to be the same—whether the body was at rest or not. On the other hand, the quantity of carbon given off was larger when a greater amount of labour was performed; consequently the needed quantity of carbon would be greater when the body was active than when passive. These facts were settled. In reference to them estimates had been made of the amount of nourishment necessary for men, women, and children under different circumstances. It might be said that the hospital doctor did not need them, as the patient's condition would show whether the nourishment received was sufficient; but that was not the case. In these respects it was impossible always to attend to the patient's complaints, as these might arise from the plainness and sameness of the food. The dietary rules in various hospitals were so different that it was difficult to make any comparisons as to their results. However, Professor Panum had made a series of investigations in several hospitals where the dietary rules were somewhat similar. He had discovered in some hospitals that the amount of nourishment received was less than was necessary, but this was accounted for by the amount of food received from outside the hospital. He proposed that a system of investigation should be organised, the principal points of which had already been given in the programme of the Congress. Professor His, the president, thanked the speaker.

Professor Panum then took the chair, and the discussion as to the next place of meeting was commenced. Professor His read the following report. The meeting place for the next Congress had been considered by a committee consisting of the Congress Committee proper and the honorary members. The president had been in communication with Lyons, St. Petersburg, Rome, and various towns in Germany. As far as Lyons was concerned, it was almost out of the question to talk of meeting in France again before having been in Germany. The proposal to meet in St. Petersburg had presented so many difficulties that it had to be given up. A letter had been received from Rome saying that the Congress would be welcome in that town, but Professor Tommasi Crudeli had declared it impossible to meet there in August, which was the only convenient month for the European universities. Many circumstances were favourable to Germany as the next place of meeting, and Professor Virchow had promised the Congress a most hearty welcome. The choice, indeed, would have fallen on Berlin if a most hearty invitation had not been received from Washington, and the majority in the committee had finally decided in favour of that town.

Professor Billings returned thanks for the honour shown his country; Professor Rossander (Stockholm) returned thanks for the hospitality shown to himself and countrymen; and Sir Risdon Bennett for England.

Professor Virchow thanked the king and royal family for their patronage. Professor Panum then, in a few farewell words, closed the meeting.

The Etablissement National was the scene of the farewell entertainment, which was attended by about 2000 persons, including the members of the Congress and their ladies. The entertainment broke up about 1.30 A.M., the company separating with evident regret that a week never to be forgotten had so soon come to an end; and, in fact, the great hospitality of the Danish medical profession, the enthusiastic sympathy of the whole population, combined with fine weather in this beautiful country, had made this Congress one of the most interesting in the whole series.

THE FIFTH INTERNATIONAL CONGRESS OF HYGIENE.

(*From our own Correspondent.*)

CHOLERA AND QUARANTINES.

THE cholera epidemic has been the cause of some soreness among the members of the Congress. It can scarcely be said that it has been debated as an abstract question. It seemed rather as if there were certain nations and men who had been impeached, and were therefore called upon to make good their case against all. Undoubtedly there is a political reason which prompts certain Frenchmen to infer that but for English interference in Egypt the cholera would not have been imported into Europe. Of course, it is objected to this that we are equally interested, commercially, if not politically, in seeking to prove that quarantines are of no use. But an international congress of scientific men should not allow itself to be influenced by rival commercial and political interests. It should only seek to unravel the truth, whatever the consequences may be. Perhaps, however, the animosity was increased by the manner in which the case was presented. Dr. Dutrieux Bey of Alexandria, who, by the way, is not an Egyptian, but a Belgian doctor, thought to make his position as the opponent of quarantines all the stronger by attempting to prove that cholera broke out spontaneously, and was not imported. This was a most unfortunate manœuvre, for it put the real question at issue into the background, and deprived Dr. Dutrieux Bey of all support. The members were afraid to vote against quarantines, as they might be thus supposed to deny the Asiatic and transmissible character of cholera. In spite of the obvious danger of creating this confusion, Dr. Dutrieux Bey commenced his speech by explaining that he had personally examined the valley of the Nile, and there found many cases of cholera (notably on April 4th), showing that this disease had prevailed to a considerable extent before its presence was generally admitted. The sanitary condition of the Nile provinces had so deteriorated that he thought cholera had become indigenous to the soil. According to Collin and numerous authorities, the plague had a preliminary stage of a mild and endemic description; then, after sundry premonitory symptoms, showing the gradual development of receptivity, it broke out in its violent and epidemical form. The same might be said of cholera. Examining the death returns and the hospital papers of Toulon, he had found one death from cholera on January 17th, and at Marseilles there had been cases of cholera ten days before the arrival of the suspected ship. The distinction established between Asiatic cholera and cholera nostras was but an arbitrary and artificial device. The importation of cholera had become a dogma, and, like dogmas, was blindly and obstinately defended. But cholera was not particularly contagious; it was less contagious than diarrhœa. As in all ports there were always arrivals from doubtful districts, it was easy enough to find a culprit; but to prove the importation it did not suffice to show that a death had occurred; it was necessary to demonstrate that previously the country was absolutely free. Unfortunately, we always watched the entrance-door instead of looking inside. Thus, while Europe was busy establishing quarantines on the Suez Canal, nothing was done to remedy the internal condition of Egypt, and the result was an epidemic which swept away about 100,000 out of a population of less than 5,000,000. However limited the possibility of transmission, measures must be taken. But could it be said that quarantines were really useful? In 1852 cholera began at Cologne without any trace of importation. In Russia cholera was said to have been imported by a land route in 1832 and 1848, while it was supposed to have come by sea in 1865, and broke out spontaneously at other periods. As a

matter of fact, cholera was endemic in Russia. Dr. Dutrieux Bey then quoted a number of instances where ships had brought cholera patients and yet no epidemic ensued, nor had the railways in India facilitated the spread of the disease. Quarantines were useless, as they were only established after the germs had been introduced, and should be replaced by sanitary inspection and rigorous disinfection. This was the policy that had been successfully carried out by Norway, Sweden, and Denmark. But for the fear of quarantine, captains of ships would not conceal cases of illness, and the public authorities would not be tempted by a false sense of security to neglect the real methods of fighting epidemics.

Dr. Proust, in reply, urged that the International Epidemical Conference, held at Vienna in 1874, was unanimous on the necessity of maintaining quarantines against Asia, and was only divided in opinion as to the possibility of establishing quarantines between the different countries of Europe. At great length he proceeded to prove that undoubtedly cholera had been imported, notably after pilgrimages to Mecca. Quoting the report of M. Mayé, who had been sent by the French Government to Egypt, Dr. Proust remarked that the sanitary condition of Damietta was not more unfavourable than usual when the cholera broke out. Even Dr. Hunter could not recognise the spontaneity of the outbreak; though, to please his Government, he was forced to say it was "a resuscitation." He then accused Dr. Dutrieux Bey of not having spent sufficient time at the hospitals studying the papers, and maintained that, far from Toulon and Marseilles being prepared for the cholera, it so happened that the health of these towns was exceptionally good at the moment of the outbreak, and there was a remarkable absence of diarrhœa or cholera nostras.

Dr. Dutrieux Bey at once replied that he denied the competence of M. Mayé, who had only spent a few hours at Massourah, and had not visited the Delta. Why did they not reveal the names of those convenient stokers who brought the cholera? And who was there who could satisfactorily explain the difference between Asiatic cholera and cholera nostras? The Vienna Conference had failed to show the efficacy of quarantines, nor could it venture to say that cholera was not endemic in Russia, or to put aside the objection that the Caspian Sea was a Russian lake which Europe could neither watch nor control. Why, then, when cholera might cross unchecked the broad frontier line of Russia, was so violent an attack made upon the Suez Canal?

Dr. Brouardel thought there were some points of common agreement. He was quite willing to suppress the term cholera nostras; but a cholera does exist which does not spread; it lives and dies in one place. Another form of cholera is transmissible. So long as cholera was limited to its birthplace nothing much was said about it; but if, on June 21st, the alarm was given, it was not because there were cases of cholera at Toulon, but because the cholera had spread from village to village in the south of France. The post-mortem examinations which Dr. Brouardel had made last year at the Paris morgue revealed no less than six cases of cholera. Yet this was of little importance, and the thirteen deaths at Toulon in one day would have been treated in the same light but for the fact that it then became clear the disease was of the second and transmissible type. It appears, however, that the Mayor of Toulon explained to Dr. Brouardel that there were in reality only four deaths from cholera on that memorable day, the mayor having falsely registered all deaths from diarrhœa as cholera, so as to terrorise the population and clear the town. No doctor at Toulon accused the *Sarthe* of importing the disease, and if quarantines were badly managed, they might be improved instead of abolished.

Dr. Zoëros Bey, the representative of the Ottoman Government, then spoke with much animation in favour of quarantines. The Crimean epidemic had been imported. In 1865 another epidemic was introduced by a ship belonging to the State, and resulted in the death of about 30,000 of the Sultan's subjects. On the other hand, in 1860 an individual having brought the cholera to a small village on the Bosphorus, a cordon was established round the village and the epidemic did not spread. Later on several cases occurred in a hospital through the use of a room where cholera patients had been treated during the previous epidemic; by placing the patients under canvas and isolating them no further harm occurred.

Dr. Proust now spoke once more. Together with his fellow delegates from the French Government, he had questioned thirty-five doctors at Toulon and more than 200 at Marseilles; why should the opinion of one doctor from Egypt be accepted against them? Was this one solitary voice to upset the system Europe had instituted to protect itself against epidemics?

These remarks elicited a reply from Dr. Dutrieux Bey, and he insisted that no importation had been proved before the existence of receptivity. As for the evidence of the doctors mentioned by Dr. Proust, he wished to know on what basis inquiries should be conducted—verbal assertions or death-certificates?

Dr. Rochard spoke once or twice on the French side.

Finally Dr. Crocq of Brussels sought to discuss the matter in a calmer tone. "Is cholera transmissible? Yes, it is; but," he added, "receptivity is not yet sufficiently well known to base a system on it. Cholera, though contagious, miscarries in certain cases. In some towns it kills ten persons, in others thousands. Sometimes there are but one or two cases, sometimes 10 per cent. of the population is swept away. This difference has not been sufficiently studied. But as the disease is transmissible, we must adopt quarantines. At the same time, we shall avoid exaggerations. Tae best things perish by exaggeration. Land quarantines are impossible. They may spread the contagion, but can never prevent it. In certain circumstances they might, however, be applied. Notably in the steppes of Russia, where surveillance is easy and in those cases useful." The same might be said of certain parts of Asia or Africa; places, for instance, where there is but one road. This proved that he was in favour of quarantines in seaports, but on condition that they were applied reasonably, and not in a vexatious manner. The germ being principally transmitted by intestinal evacuations and in soiled linen, it was not so difficult to stamp out the cause of epidemics.

The section numbered fifty-one members, and the greater part rose to vote against Dr. Dutrieux Bey, while the one solitary Englishman present voted for him. He, however, explained that his vote was given as a protest against quarantines, and not as endorsing Dr. Dutrieux Bey's views on the etiology of cholera. Dr. Dutrieux Bey was not, however, to be beaten. Every ensuing morning he sought to reintroduce the question; and, as in the interval Dr. Corfield, Dr. Sweeting, and other medical men arrived from London, there was every reason to anticipate that a better fight could be made. The majority, however, clamoured that they had had enough of the question; and, as Dr. Raymondaud was to read a paper on the Organisation of a Universal Society against Epidemics, it was decided that the question of quarantines should be taken up again in discussing Dr. Raymondaud's proposals. This paper was, however, not read till the end of the last sitting but one. The principal suggestion was the union of all sanitary societies and authorities to raise funds and form a limited liability company for the drainage of the Ganges valley, and thus attack the cholera at its basis.

The following morning the section gathered in force. Dr. Dutrieux Bey opened the debate by reading a short paper. The Congress had decided that quarantines ought to be improved, but had not said how such improvement should be attempted. In theory, quarantines were to be applied at the first case of Asiatic cholera and maintained till after the last case. In practice, however, this was rarely, if ever, done. It is impossible to ascertain the first or the last case, and quarantines are established too late and abolished too soon to be of any real service. Also the regulations and restrictions are constantly defied. Consequently, Dr. Dutrieux Bey moved:—First, that in fixing the duration of quarantines the time allotted should be based on the time required to submit the ship to a rigorous sanitary and medical inspection and disinfection; and further, to prevent any misunderstanding, it would be advisable to substitute the words "sanitary control" for the word "quarantine." Secondly, that it is desirable to modify as promptly as possible the quarantines actually established in the Mediterranean ports so that their duration may be limited to the time necessary to carry out a thorough medical and sanitary inspection and disinfection.

The moment this resolution had been read out, Dr. Zoëros Bey excitedly protested that the Ottoman Government would never adopt such a measure, as Constantinople had been saved year after year by quarantines. Amid much clamouring, Dr. Corfield commenced a carefully prepared speech, by remarking that formerly all Englishmen were in favour of quarantines, but that now opinion was as unanimous in the contrary direction. At this point, Dr.

Rochard rose and, together with other French doctors, loudly objected to Dr. Corfield's being heard. The question had been decided, and they would not allow it to be revived. An Englishman then protested that the previous vote was complicated with the question of the character of cholera; that a vote on the simple question of quarantines had not been taken, and that, as England was the country which was most attacked, it was only fair to hear the distinguished professor of hygiene, who had prepared a defence of the English policy. Dr. Rochard, however, protested that there was no desire to attack any nation; the name of England had never been mentioned, so Dr. Corfield need not trouble himself to defend his country. This, of course, was a mere play of words; for, though the name of England had not been mentioned, there could be no doubt that we are accused of interfering with quarantines in the Red Sea, and of allowing commercial interests to take precedence over the interests of the health of Europe. Nevertheless, Dr. Corfield was not heard, and the only concession made was to allow Dr. Dutrieux Bey's resolution to be put to the vote without any discussion. In spite of this disadvantage, twelve members stood up for the resolution, and only twenty to twenty-four against it. There must have been more than fifteen abstentions. This result caused much surprise, and was considered a moral triumph for the minority. Of the twelve voters against quarantines, three were English, and the remainder for the most part Dutch and Swiss.

The Hague, August 28th, 1884.

THE BRITISH DENTAL ASSOCIATION AT EDINBURGH.

THE British Dental Association, which occupies the same position with regard to the dental profession as the larger and more widely known British Medical Association does to the medical, has just been holding its fourth annual general meeting at Edinburgh, under the presidentship of Dr. John Smith, LL.D., a well-known practitioner of that city. The proceedings commenced on Thursday, the 28th ult., when the local "Scottish" branch held its annual meeting. This was followed by a reception of the members of the Association by the president and the Lord Provost of Edinburgh (Sir George Harrison) at the Royal College of Surgeons, of which Dr. Smith is also president. A very interesting collection of models, pathological specimens, and novelties in dental apparatus was arranged for inspection, and several members gave practical demonstrations of different methods of filling teeth, &c. In the evening there was a conversazione at the Forestry Exhibition, at which the Lord Provost again did the honours.

The serious business of the meeting began at half-past nine on Friday morning and occupied the entire day. At the business meeting Mr. F. Canton, the hon. secretary, reported that there had been a decided increase in the numerical strength of the Association during the past year, though not quite as great as might have been expected, about fifty new members having joined. It now included five branches, three in England and two in Scotland, whilst a fourth English branch was then in process of formation. In other respects the present condition and prospects of the Association might be regarded as satisfactory. It was decided to hold the next annual meeting at Cambridge, and that it should be extended over three days, on account of the increased amount of business which had to be disposed of. Mr. R. White of Norwich was nominated as president-elect.

A short address from Mr. John Tomes, F.R.S., the Chairman of the Representative Board, who was unable to be present owing to ill-health, was read by Mr. J. S. Turner, the vice-president. It explained the causes which had led to the partial failure of the prohibitory clauses of the Dentists Act, which had given rise to a certain amount of dissatisfaction amongst the members of the Association, a cry having been raised that the Representative Board was neglecting its duty in not prosecuting the numerous quacks who were defying the provisions of the Act all over the country. Mr. Tomes pointed out that the dental was scarcely worse off in this respect than the medical profession, the Legislature having always steadily refused to make the act of medical practice by unqualified and unregistered persons penal. No fault had been found with the educational clauses of the Act, and from the gradual operation of these a steady improvement in the state of the profession might confidently be expected. If full force were given to these, they might lightly regard the mere prohibitory sections of the Act.

The valedictory address of the retiring President, Mr. C. Spence Bate, F.R.S., of Plymouth, was read by the hon. secretary, Mr. Bate having gone to Canada to attend the meeting of the British Association. He called attention to the many important questions still remaining unsolved in the department of dental surgery, and pointed out that the solution of some of these was of great importance for the purpose of affording a sure basis for sound curative treatment. Much might be done by the persevering efforts of enthusiastic individuals, but unfortunately individuals were very prone to approach questions of this kind with a strong personal bias. Thus, the cause of decay of the teeth had been studied by many, and the futility of individual research was well exemplified by the result that almost every inquirer had founded a new theory which was identified with the idea preconceived by himself before ever he commenced to study the subject. Mr. Bate advocated the appointment of small committees for this purpose, and recommended also the extension of the system of collective investigation to dental diseases, pointing out that with regard to many pathological changes in the mouth a carefully considered report of a series of cases would be of far greater value than the present system of recording remarkable examples, which could only demonstrate the possibilities of abnormal conditions, and did but little to advance real knowledge.

Dr. John Smith then took the chair, and delivered his inaugural address. Those present were, he remarked, called together as the representative and supervising assembly, and to a certain extent as the administrative convocation for the dental profession throughout Great Britain. It might be argued that as there existed a Dentists Act enunciating the law which regulated dental practice, that long before the Association existed there was at least one great dental school, and one great surgical corporation conferring on the students of that school a high distinctive qualification; that at the present day there were many additional complete and reliable schools of dentistry, and a full and recognised dental qualification was conferred in each of the three divisions of the kingdom; that over all these there was a court of supervision provided in the General Medical Council, and a safeguard and guarantee against illegal practice and pretenders in the Dentists' Register—that, in the face of such a state of matters, little seemed left for an association such as theirs to do. The answer was that by the various schemes referred to, the machinery for education, examination, and qualification had been provided; but some effective power was required to render this machinery available, and to ensure the work it was intended to perform being done, and done thoroughly; and, besides this, that an opportunity should be afforded for the collective voice of the profession being heard on all important questions. And whilst the Association thus acted as a valuable and powerful element of control, it also served to establish and maintain friendly feeling as well as scientific intercourse amongst its members. Dr. Smith then dwelt upon the importance of the executive carrying out its functions with the utmost care and deliberation, and followed Mr. Tomes in deprecating hasty and inconsiderate expressions of opinion on the part of individual members. He concluded with an eloquent peroration, in which he welcomed his audience to the "stately Edinburgh throned on crags," and described its beauties.

Papers were next read by Mr. Robert Reid of Edinburgh, on the Application of Dental Science in the Detection of Crime; on the Prevention of Caries, by Mr. Henry Sewill of London (see page 402); on the Treatment of Fractures of the Inferior Maxilla, by Mr. Walter Campbell of Dundee; on Abscess of the Antrum, by Mr. G. W. Watson of Edinburgh; on Educational Centres, by Dr. Walker of London; and on the Prevention of Irregularity, by Mr. J. R. Brownlie of Glasgow. Some of these papers gave rise to a considerable amount of discussion.

In the evening about a hundred and fifty members and visitors dined together at the Waterloo Hotel. Amongst the visitors present, several of whom had also attended the afternoon meeting, were the Lord Provost and two of his brother magistrates; Dr. George Balfour, President, and Dr. Peddie, ex-President, of the College of Physicians of Edinburgh;

Dr. Littlejohn; Professors Maclagan and Annandale; Drs. Fergus, Keiller, and David Wilson; Mr. Imlach, and others.

On Saturday there was an excursion up the Firth of Forth, in a steamer specially chartered for the purpose, to view the preparations for the Forth bridge now in process of construction, and a very successful meeting was thus brought to a close.

HEALTH OF THE ARMY.

No. II.

THE average strength of the white troops serving in Ceylon in 1882 was 990, among whom the admissions into hospital were in the ratio of 1197, the deaths of 8·08, the invalids sent home 56·56, and the mean sick 62·98 per 1000. These are all considerably lower than in 1881, but, with the exception of the deaths, above the average of the last few years. The death-rate has been very low, amounting only to half the average, the reduction being in the classes of fevers, tubercular diseases, and general injuries. There was only one admission and one death from enteric fever.

In China and the Straits Settlements the admissions from a strength of 1663 men amounted to 953, the deaths to 6·01, the invaliding to 52·31, and the mean sick to 50·37 per 1000. The admissions and deaths were much below the average, but the invaliding and mean sick above it, though lower than in 1881. Fevers and diseases of the digestive system gave rise to the largest numbers of admissions. There were only three cases of enteric fever, two at Hong-Kong, and one, which proved fatal, at Penang. No case of cholera occurred during the year.

In India the average strength of European troops was 57,344, from whom the admissions into hospital were 1437, the deaths (including those of invalids) 12·82, the invalids sent home 34·14, and the constantly sick 66·38 per 1000. These ratios, with the exception of the mean sick, were considerably lower than in 1881, and were also under the average of the last ten years.

The sickness, mortality, and mean sick in Bengal were higher than in the other two presidencies; the ratio of admissions into hospital was 1555, of deaths 13·93, and of constantly sick 69·83 per 1000. Compared with the average of preceding years these results are very favourable as regards the death-rate, but higher as regards admissions and mean sick. Paroxysmal fevers were, as usual, the chief cause of sickness, having furnished upwards of one-third of all the cases. The highest death-rate was from diseases of the digestive system, but it was very little above that from enteric fever. The latter gave rise to 7·4 admissions and 2·83 deaths per 1000 of the strength. The stations at which it was most prevalent and fatal were Sitapur, Cawnpore, and Lucknow. At the first of these the admissions were 53·40 and the deaths 18·98 per 1000 of the strength, at Cawnpore they were 18·56 and 11·34, and at Lucknow 13·84 and 5·81. At Sitapur the disease occurred in a wing of the Lincolnshire Regiment, which arrived at the station from Gibraltar on the 13th of February, no case of enteric fever having occurred in it up to that date. On the 23rd a man was admitted with simple continued fever which afterwards proved to be enteric. The disease continued to prevail till June 9th, 43 cases having occurred during that time. A case of this disease had occurred at the station in the end of January in the corps which was relieved by the Lincolnshire Regiment. It is noteworthy that in the other wing, which came out at the same time from Gibraltar, but which was sent to Benares, no case of enteric fever occurred till July, when two men were admitted, and in August two more, after which it ceased. At Cawnpore the admissions amounted to 18·56 per 1000 and the deaths to 11·34; and all occurred, not in a newly arrived corps, but in one which had been two years and four months in the country, and might therefore be supposed to be in a great degree acclimatised. The disease prevailed in it from the end of February till the end of June. The officers, women, and children, and the Royal Artillery at the same station escaped it entirely. No details are given of the outbreak at Lucknow. Cholera did not prevail to any extent generally throughout the command, the admissions having been only 2·0 and the deaths 1·24 per 1000. At Fyzabad and Benares, however, it occurred as an epidemic; at the former place the admissions were 35·85 and the deaths 24·72 per 1000 of the strength, and at the latter 27·71 and 15·11 respectively. The disease occurred chiefly in the third quarter of the year. No details are given in the report respecting these epidemics except that at Benares "the men were promptly encamped out with satisfactory results," while at Fyzabad "after some temporising, the barracks and hospital were vacated, and the outbreak ended, but whether naturally by exhaustion of the period of its life-time, or by the good effect of removal from infected buildings, is not apparent."

The strength of the troops in the Madras command was 10,817; the admissions into hospital were 1069, the deaths, inclusive of those of invalids, 11·00, and the mean sick 59·39 per 1000; the latter was slightly above, but the other two ratios were considerably under, the average of the last ten years. Diseases of the digestive system were the most prevalent and fatal in the command, and next to them fevers. Enteric fever was the cause of 4·3 admissions and 2·13 deaths per 1000. Bangalore was the station which furnished the greatest number of cases, the admissions having been 11·30 and the deaths 4·16 per 1000 of the strength stationed there. "No insanitary condition in or about the barracks likely to influence the causation of this disease could be discovered, but it is remarked that the impure nature of the drainage flowing into the Ulsoor Tank, and other sources of pollution, must always render the water-supply open to suspicion." Although cholera was very prevalent among the civil population, there were only 15 cases and 9 deaths among the troops, being in the ratio of 1·4 and 0·83 per 1000; 11 of these and 4 deaths occurred on the march, 7 with 4 deaths between Kamptee and Bangalore, and the others among troops in the boats on the river after leaving Tonghoo *en route* for Bangalore. One death from snake-bite occurred at Secunderabad; the man lived about thirty-two hours after the receipt of the injury.

In Bombay, from a force of 10,197 non-commissioned officers and men, the admissions were 1406, the deaths 10·79, and the mean sick 61·47 per 1000; the two former being much under and the latter above the average of preceding years. The most prevailing cause of sickness was paroxysmal fevers, which gave rise to more than one-third of the admissions. Enteric fever was the most fatal disease, there were 43 cases and 18 deaths, being in the ratio of 4·2 and 1·77 per 1000. At Nusseerabad 13 cases and 8 deaths occurred in a force of 668 men; at Colaba there were 9 cases, of which 4 proved fatal, but 8 of these were landed from H.M.S. *Euphrates*, the disease having been contracted at Alexandria. Cholera furnished only 10 cases and 7 deaths, and of these 6 cases and 5 deaths were at Nusseerabad in the third quarter of the year.

The relative health of the different arms of the service for the year 1882 is shown in the following summary for the whole force in India.

Per 1000 of mean strength.	Admitted.	Died.	Invalided.	Constantly sick.
Cavalry ...	1419 ...	10·87 ...	49·43 ...	68·27
Artillery ...	1510 ...	12·50 ...	48·94 ...	68·33
Infantry ...	1435 ...	12·12 ...	31·39 ...	65·85

The artillery therefore show the highest rate of sickness and mortality and the cavalry the lowest, but the infantry had the lowest proportion constantly in hospital.

The most interesting chapter in the report is that which relates to the health of the troops serving in Egypt from July 17th to the end of the year. The admissions into hospital during that period were in the annual ratio of 2322, the deaths from all causes of 88·90, and the invalids of 521 per 1000. The history of the period is divided into two, the first portion relating to the Expeditionary Force from July 17th to October 9th, and the second to the Army of Occupation from October 10th to December 31st. The annual ratio of mortality of the former was 76·57, and of the latter 100·69 per 1000. The history of the Expeditionary Force was given by Sir J. Hanbury, the Principal Medical Officer, and Dr. Marston, the Sanitary Officer of the Army, in the report for 1881 (see THE LANCET, November 24th, 1883). The principal causes of mortality in the Army of Occupation were enteric fever and dysentery. The prevalence and fatal character of the fever were due to a combination of causes. The soldiers were mostly young men, they suffered from heat, hard work, fatigue, indifferent food, and foul water, and all the conditions necessary for the development of epidemic disease were present in Egypt generally, and Cairo in particular. "Every available

barrack and public building in Cairo, and in Egypt generally, was in so foul a state as to be uninhabitable by Europeans, and it was impossible to find any camping ground affording sufficient space, with water supply available, that was not, for military considerations, too far distant from Cairo itself." In the report the question is discussed how far in a campaign "preventable diseases can be prevented," and it is clearly shown that the conditions under which war is waged render this practicable only to a very limited extent. This section of the report deserves careful study, as showing the difficulties with which the medical department have to contend in their endeavours to preserve the health of the troops. There is an interesting account, taken from the *Archives de Médecine et de Pharmacie Militaires*, 1883, of the prevalence of enteric fever in the French Army of occupation of Tunis, North Africa, which shows them to have suffered to even a greater extent than our troops in Egypt, the admissions having been in the ratio of 210 and the deaths of 51·95 per 1000; while in Egypt the ratios were 93 and 35·98. In connexion with the death-rate in Egypt, it may be stated that of 171 cases of sunstroke and heat exhaustion, caused by the newly landed troops having to march in the desert in the midday sun, only 3 died, a result highly creditable to the medical officers.

In the appendix to the volume a very interesting medical report of the Eastern Soudan Expeditionary Force is given by Brigade-Surgeon McDowell, who was Principal Medical Officer. Full details are given of all the arrangements, which appear to have been very judicious and well carried out. The campaign lasted from Feb. 15th to April 6th, a period of fifty-one days. The average strength of the force was 4018; the admissions into hospital were 512, and the deaths, all in action, were 126; being in the ratio of 127·4 and 31·36 per 1000 of the force. If these numbers are reduced to an annual ratio they give 912 admissions and 224·4 deaths per 1000. Nearly half of the admissions were from wounds and injuries. An interesting table is given of the seat of the wounds and also of the projectile or weapon by which they were inflicted. Two-fifths of those killed in action were wounded in the chest, one-fifth in the head, and nearly one-fifth in the abdomen; while of those admitted into hospital one-third were on account of wounds of the upper and nearly one-third of the lower extremities.

There is also in the appendix a report on the cholera epidemic in Egypt during 1883, by Surgeon-General Irvine, the Principal Medical Officer of the troops. The first cases of the disease were reported at Damietta on June 22nd; it then appeared at Mansourah, and, in spite of cordons, spread over the country, and on July 15th cases were reported in Cairo. On the 21st the first case among the troops occurred at Suez, and on the 23rd it broke out among those at Cairo. Notwithstanding every precaution being adopted by evacuating the barracks, encamping the troops, and moving the camps when requisite, the disease spread among them; and before the termination of the epidemic 194 cases and 142 deaths were reported, "being in the ratio of 2·9 and 2·1 per cent. of the strength." The disease was of a very virulent type, 73 per cent. of the cases having proved fatal. Contrary to the general experience in cholera epidemics, the attendants on the sick suffered in a much greater degree than the rest of the troops, and this was also the case with patients in hospital compared with the healthy men. No information is given in the report as to any special precautions being taken to protect the attendants on the sick, a point to which much importance is attached in the instructions recently issued by the Royal College of Physicians. A table is given of the cases and deaths among temperate, intemperate, and men of irregular habits; but as the numbers living of each class are not stated, it is of comparatively little value; the proportion of deaths to cases was almost identical in the three groups. The ages and length of service of the men attacked and of those who died are also given, but the information is defective in the same respect of the numbers living being omitted. The proportion of deaths to cases was higher among the old than the young soldiers.

During 1882 the number of recruits examined medically was 45,423; of these, 19,294 were rejected as unfit, being in the ratio of 425 per 1000 inspected. In the preceding year the ratio was 432. From this, however, should be deducted a number of men rejected as being "under height" and "apparent age not in accordance with General Orders," as such cases ought not to have been brought before the medical officers by the recruiting parties. Exclusive of these, the proportion of rejections would amount to 379 per 1000, or exactly the same as in the preceding year. Upwards of one-third of all the rejections was for being "under chest measurement." Next to this the most frequent cause of rejection was "defective vision," the proportion being 35 per 1000 examined. Muscular tenuity and debility was the reason assigned for rejection in 27, and disease of the heart in 21 per 1000. Of recruits inspected by army medical officers, 435 per 1000 were rejected as unfit, while the proportion among those inspected by civil medical practitioners was only 140; but of the men passed by the latter, 224 per 1000, or nearly one-fourth, were subsequently rejected on joining at head-quarters. England and Wales furnished 737 per 1000 of the recruits, Scotland 106, Ireland 145, and the colonies and foreign countries 12. Omitting the last on account of the small numbers, the proportion of rejections was highest among the Irish and lowest among the Scotch, the difference amounting to 50 per 1000. Taken by arms of the service, the rejections were highest in infantry regiments and lowest in the Foot Guards, the proportions being 445 and 279 per 1000. The return of the ages of the recruits shows a marked decrease of those under nineteen, a marked increase at the age of nineteen to twenty, and a slight decrease of those of twenty and upwards. We fear, however, that but little reliance can be placed upon these results, as there are no means of ascertaining the correct age of the men, and their statements are not in the least to be relied on. It seems very probable that the difference in the younger ages was simply the result of a mis-statement on the part of the younger recruits, for the purpose of bringing themselves within the age at which they would be eligible for enlistment. As regards the height of the recruits, there has been a marked decrease in those between 5 ft. 4 in. and 5 ft. 6 in., and an increase in the numbers at all heights above that. There has also been an increase in the proportion of recruits at the higher weights, and chiefly of those from 130 to 140 lb. A new table has been introduced, giving the chest measurement of the recruits at different ages; it shows that in 10,000 there were 3720 from 34 to 35 inches, 2613 above 35 inches, 2366 from 33 to 34 inches, and 1301 under 33 inches; there are no data for a comparison of these numbers with previous periods. The returns of the state of education of the recruits show a decrease in the proportion unable to read and write of 24 per 1000. Of the recruits examined, 928 per 1000 had marks of vaccination, 24·9 of small-pox, and 47·1 of neither. This shows a decrease of 10·2 per 1000 on the numbers bearing marks of small-pox, but the proportion having no marks remains unchanged. The value of vaccination is borne out by the results as regards small-pox in the army during the year. There were only 14 cases and 1 death among the soldiers serving at home, 44 cases and 4 deaths in India, and 2 cases with no death in the colonies. Among the women at home and abroad 14 cases occurred and no death, and among the children 11 cases and 1 death.

In addition to the papers already noticed relating to the Egyptian expedition, the appendix contains others of considerable interest. Of these we may specially note the report by Professor De Chaumont on the Hygienic Exhibition at Berlin in 1883. He was sent to Berlin with instructions "to report upon any exhibits that might be usefully adopted in our service so far as medical and hygienic appliances went." The result of a careful examination led him to the conclusion that there was "comparatively little that is new, or that could be usefully adopted in our service." He has given a brief account of these exhibits under the headings of (1) the arrangements for conveying sick and wounded in time of war; (2) certain surgical appliances; (3) plans of hospitals and barracks; (4) exhibits of hygienic apparatus; (5) miscellaneous. Under the first of these he describes especially a new spring military stretcher by C. Epner, Berlin, which appears to possess considerable advantages. In the second group he calls attention to "Esmarch's turf or peat dressings, which seem to be very successful; they are absorbent and antiseptic, and may be left for a long time"; and also to Dr. Walcher's wood-wool, which appears to answer well. Among hygienic appliances a drying apparatus by Oscar Schimmel and Co. of Chemnitz appeared to deserve particular notice as accomplishing its object very efficiently, and being free from most of the objections which appertain to drying apparatus in general. Dr. De Chaumont thinks that a Schimmel's apparatus in each barrack for the purpose of drying the men's clothes when they come in wet would have an important influence in the prevention of serious disease.

Among other papers of interest in the appendix we would refer our readers to a case of death from snake-bite; a case of poisoning by iodoform, not fatal; an outbreak of fever on board of the War Department ship *Stanley* in the Mediterranean; and of enteric fever among the troops at Athlone.

The usual list of operations performed at Netley is given, with notes by Surgeon-Major Tobin, the Assistant Professor of Military Surgery. They were 45 in number, of which 2 terminated fatally—one after amputation of the leg at the junction of the lower and middle third of the femur, and the other after excision of the hip-joint. Both men had been wounded at Kassassin.

We cannot close our notice of this volume without expressing our regret at the absence again of the "report of the progress of hygiene for the year," begun in 1860 by the lamented Professor Parkes, and continued till last year by his successor, Dr. De Chaumont. We also miss any contribution from the medical division of Netley Hospital. It is to be regretted that the splendid opportunities of this large hospital are not turned to better account in the interests of the profession, and especially of the medical officers of the army.

DISINFECTANTS AT THE HEALTH EXHIBITION.

IN the East Annexe, close to Messrs. Doulton's pavilion, many of the disinfectants at present in vogue are collected. About twenty manufacturers exhibit; but there is, on the whole, but little novelty calling for notice. The coal-tar compounds, thymol and a few other aromatics, permanganates, and sulphurous acid, nearly exhaust the list. A few bear fancy titles, such as "sanitas," "Jeyes' perfect purifier," "affinitan," and "antimicrobe." The first of these is the well-known and very interesting invention of Mr. Kingzett. Its most active agent is peroxide of hydrogen, generated by the oxidation of turpentine, and present in very considerable quantity. There can be no doubt of the real value of sanitas. It is non-poisonous, agreeable in odour, capable of being used in many forms, and above all is an active, if not very powerful deodoriser. It has attained and deserves great domestic popularity, but we cannot regard it as a sufficiently powerful agent for dealing with zymotic disease. Much the same may be said of thymol, the eucalyptus preparations, and Mr. Wheeler's pixene, which last is an elegant pine-tar antiseptic.

Several manufacturers exhibit carbolic acid and its preparations; but the place of honour must certainly be assigned to Messrs. F. C. Calvert and Co., by whom this most important and valuable compound was first introduced to commerce. It still takes a very high place as an antiseptic, although its disagreeable smell and weak deodorising power are serious drawbacks to its general use. Messrs. D. and W. Gibbs, Messrs. M'Dougall Brothers, and Messrs. Mackey, Mackey, and Co. also exhibit carbolic preparations, and the last-named firm many vegetable and mineral disinfectants in addition.

In a case near the southern end of the gallery, Messrs. Boake and Co., of Stratford, show the new and important disinfectants of Professor Tuson, the scientific peculiarities of which are fully described in a handbill. The liquid is essentially a solution of chloride of zinc, saturated with sulphurous acid. It is unnecessary to speak of the sanitary value of these two agents. Each occupies a front rank in the list both of antiseptics and deodorisers; each supplies what the other lacks. The liquid properly diluted for use has no injurious action on metals or textile fabrics, and but little smell, so that while it destroys foul smells, such as that of sulphuretted hydrogen, it leaves none behind it. The solid has still more scientific interest. It is essentially a mixture of sulphite of lime, sulphate of alumina, and sulphate of zinc. When exposed to the air, it slowly absorbs moisture and evolves sulphurous acid according to the following equation:—

$$Al_2(SO_4)_3 + 3\,CaSO_3 = 3SO_2 + 3\,CaSO_4 + Al_2O_3.$$

When water is added to the powder, sulphurous acid is evolved with greater rapidity, while the sulphate of zinc increases the antiseptic power of the mixture. We can testify that both the solid and liquid are safe and harmless in a sick room, when used with ordinary care, and are also really trustworthy disinfectants.

As carbolic acid was introduced by Messrs. Calvert, so undoubtedly was alkaline permanganate by Mr. Condy. Condy's fluid is too well known to require description. Opinions still differ as to its trustworthiness as a disinfectant, but all must agree that it possesses much real value, and has been a boon in thousands of households. Several of the disinfectants exhibited under fancy names appear to contain the same compound. More novel and decidedly useful is the sulphur disinfectant of Mr. Overbury, of Alcester, which is simply a cake of sulphur with wood shavings embedded in it. Everyone knows that it is not easy to make sulphur burn quietly to the end, and in this case the wood acts as a wick, easily lighted and causing steady combustion. For ordinary house fumigation, one pound of sulphur should be burned to each 1000 cubic feet of space.

Several contrivances for the automatic disinfection of watercloset-pans are shown in action in the same annexe, and one or two may be briefly noticed. The London Patent Automatic Disinfection Company exhibit an apparatus by which a small and definite quantity of any suitable disinfectant is made to flow into the pan with the water, the reservoir requiring renewal but seldom. Even more ingenious is the Austin porous disinfector, which consists of an ordinary porous case filled with some powerful disinfectant, and suspended in the small tank or water-waste preventer, which supplies the closet. It is said that a single charge will last for more than a year, but care must of course be taken in the choice of a suitable disinfectant.

THE PROGRESS OF CHOLERA.

THE two most important events of the week are the steady spread of cholera in Italy and the extension of the disease into Spain. Northern Italy is now suffering from a considerable epidemic, and the disease having attacked some of the more populous towns where the sanitary arrangements are none of the best, it becomes difficult to form an opinion as to the course which the epidemic may assume. The large number of attacks in Spezia, a daily mortality there already reaching some sixteen or twenty, and the flight of the inhabitants to other towns and even to the mountains, form the most serious elements in connexion with the outbreak. The city of Naples is now also unquestionably infected, and the total attacks in the country generally have reached as high as one hundred and twenty-two, with over seventy deaths a day. Unfortunately the principal reliance still is in troops who form sanitary cordons, and in fumigations; whereas if the money spent on these measures were even now devoted to sanitary cleansings some substantial good might result. The infection of Spain has apparently been brought about by sea, and it is supposed that persons from Cette have made their way thence by a circuitous route to Alicante, carrying infection with them. The disease is fortunately not at present of a virulent type, but the inhabitants of Alicante could not be prevented from fleeing inland, and at Novelda, in the same province, deaths have already occurred. The outbreak at Toulon and Marseilles is steadily diminishing, and such fresh cases as occur in the neighbourhood of those two cities, as also at Perpignan and in its vicinity, are less numerous and less severe than they were.

We learn from Cardiff that two members of the crew of the Italian steamer *Abyssinia*, which arrived off that port on the 29th ult., were found to be suffering from symptoms which had followed suspicious diarrhœa, vomiting, &c. They were removed to the hospital on the Flatholm Island. A third man suffered from somewhat similar symptoms later on. One of the men gradually sank and died on the 3rd inst., the body being buried at sea. No further sickness has occurred, and all precautions have been taken.

The Academy of Medicine at Paris adopted, on the 2nd inst., a resolution in favour of holding an administrative

inquiry into the conditions in which cholera made its appearance, the progress of the epidemic, its mode of propagation, intensity, and duration. It also affirmed the desirability of establishing an International Board of Health, as also municipal boards, on the model of that of Brussels, in the large towns. A note was read from M. Bourquet, of Aix, showing that cholera was not imported into that town by refugees from Toulon or Marseilles.

QUARANTINE AND INFECTED PORTS.

THE following notifications appear in the *London Gazette* of Aug. 29th and Sept. 2nd.

Five days' quarantine has been proclaimed at Bahia on arrivals from Europe.

Arrivals from Italy are subjected in Austro-Hungarian ports to ten days' quarantine if free from sickness, or to twenty days or more in contrary cases.

Arrivals at Algiers from all French and foreign ports in the Mediterranean, comprising Gibraltar and Tangiers, except Algeria and Tunis, will be subject to a quarantine of seven full days. Vessels having been seven days at sea without putting into port will be subject, on their arrival at Algeria, to a simple quarantine of observation of one day to three days.

Vessels arriving at Spanish ports direct from Newfoundland (their original starting-point not being France) are subject, if with clean bills of health, to three days' observation in the port of discharge.

At St. Thomas arrivals from North Africa have to undergo quarantine, as also have ships arriving from English and French Windward Islands which have direct or indirect communication by steamers with Europe.

The period of duration for quarantine for vessels leaving the Italian peninsula for the islands of Sicily, Sardinia, and other adjacent islands has been raised to twenty-one days.

Arrivals in Roumania from French Mediterranean or Italian ports have to perform quarantine at Soulina or Kustenje.

At Constantinople the ten days' quarantine on arrivals from the Black Sea has not been enforced. At Kavak passenger vessels undergo five days' quarantine.

Quarantine is applied to vessels arriving at the islands of Sicily and Sardinia from the French ports in the Mediterranean, Algeria, and the Regency of Tunis.

At Dunkirk all vessels from Italian ports undergo twenty-four hours' observation.

Vessels from Spezia are subject in other ports of Italy to a preventive observation of ten days.

At Odessa all vessels from Italy are to undergo fourteen days' quarantine, irrespective of that which may have been performed at other ports *en route*.

All vessels arriving in Norway from Belgium, Holland, and German North Sea ports must undergo medical examination before being allowed to communicate with the shore.

The quarantine regulations applying to Sicily and Sardinia apply also to the island of Elba.

At the Hague all the French ports in the Mediterranean, as well as the Italian ports extending from the French frontier as far as and including Civita Vecchia, have been declared to be infected with cholera.

At New Orleans the period of quarantine will, from and after Sept. 15th, be reduced from forty to ten days.

Vessels proceeding from cholera-infected ports and arriving at Monte Video and Buenos Ayres, after being less than forty days at sea, will be absolutely excluded from these ports as long as cholera shall continue to show itself at the place of departure.

All persons arriving in Russia from France and Italy must be provided with certificates from Russian consular officers that they have not been at any of the infected localities within three weeks of their departure for Russia.

DISUSED BURIAL-GROUNDS.—The disused burial-ground surrounding the parish church in Upper-street, Islington, is to be converted into a public recreation ground, at an estimated cost of £1100, half of which will be defrayed by the Metropolitan Board of Works, and the other moiety by the vestry of Islington. The space, an acre and a half, is to be well turfed and provided with a few flower beds.

REPORT OF THE ROYAL COMMISSION ON PRISONS IN IRELAND.

IN our issue of August 23rd we briefly alluded to the above, but the text requires more than a passing notice, as it involves charges in the administration of a comprehensive character. Passing over the first part of the report, as not directly affecting the medical treatment of prisoners, we come to the 56th paragraph, where the status of gaol surgeons is laid down. We notice that the commissioners have apparently failed to realise that at present there are actually three classes of medical officers—viz., (1) those appointed before 1877, who are surgeons to their respective county infirmaries; (2) those who were likewise appointed previous to the passing of the Prisons Act, but are not infirmary surgeons; (3) those appointed by the Lord Lieutenant since the passing of the Act. The tenure of office of the first two classes was explicitly laid down in the 27th section of the Prisons Act, and it will be within the remembrance of our readers that the ill-advised action of the chairman of the General Prisons Board in issuing a circular on May 3rd, 1879, stating that their tenure of office ceased to exist after the passing of the Prisons Act, occasioned a rupture with the several medical officers, necessitating on their part joint action, and even requiring them to threaten legal proceedings in case their status should be questioned. We regret therefore to find that this point has been not fully taken into consideration, as evidenced by the few introductory words of the 56th paragraph. After paying a well-deserved compliment to their general character, the paragraph states that the commissioners report that there is considerable friction between the medical officers and "the board." If by "the board" the commissioners allude to the chairman, we unhesitatingly accept the dictum; but between the medical officers and the vice-chairman and Mr. O'Brien (the third member) there has not been any friction; and we go further, and state that at no time was there the slightest friction between the late chairman, Sir W. Crofton, or the present hon. member, Sir J. Lentaigne. When a body of men holding the social and professional status in their respective counties, such as the existing medical officers of prisons, are coolly informed that their offices are vacant, when subsequently to this they are treated with persistent discourtesy, when their suggestions are ignored, and their duties as defined by Act of Parliament altered to suit the caprice of one person, a certain amount of friction must ensue. As we stated in an article (Dec. 8th) on the Royal Commission: "The board failed to conciliate their medical officers"; and further on, "their failure to effect this may rest to a great extent on the *personnel* of the board." The report of the commission throws new light on this "friction," for, as we read at paragraph 29, "it is in evidence that there has been for some time an entire suspension of communication, except in writing, between the chairman of the board and the inspector of his district." The inspector alluded to is remarkable for his efficiency and courtesy.

Paragraph 52 deals with the "friction" with Mr. Mac G. Eager, the governor of Limerick prison, in which case the Lord Lieutenant had actually to reverse the mandate of the board. We are aware of instances in which the chairman when inspector-general of prisons had very considerable "friction" with gaol boards of superintendence, and it is even now generally considered that there has been "friction" between the chairman and another member of the board. In paragraph 29 the report states "that upon the evidence before us it may well be questioned whether some of the principal authorities of the Irish Prison Service manifest towards one another that spirit of cordial co-operation which always contributes so much to the successful working of a public department." This indicates where the commissioners were of opinion the friction lay, and we regret that they did not apportion their blame in an honest and straightforward manner.

In February, 1883, the honorary secretary of the Association of Gaol Surgeons in Ireland forwarded, at the request of Sir R. Cross, an exhaustive statement to the commission, dealing with many points in connexion with the subject, amongst others, the daily visits to prisoners on extra diet ordered by the chairman, the rule requiring their attendance before twelve o'clock, the refusal of the board to supply them with the ordinary instruments necessary for

their duty, the unnecessary number of books to be kept, the non-payment of substitutes in case of illness or absence on public duty, the necessity for the appointment of hospital warders, and the objection to warders' families living in the prison. We are glad to see that in paragraphs 58, 60, 61, 62, 64, 65, and 72 the justice of these complaints has been acknowledged and their recommendations adopted. All these points we indicated in our issue of November 17th, 1883. We cannot leave this part of the report without drawing attention to a portion of paragraph 59, in which the board are convicted of a deliberate attempt to falsify a report. The circumstances are shortly as follows:—A medical officer was called on to attend a member of a warder's family who resided in the town. This duty he objected to perform, as not being laid down in his instructions or implied by usage. A correspondence with the board ensued, and in their minute of August 23rd, 1880, they state, "That the Prisons Board '*require*' the medical officer to attend the families of warders, provided they live within one half mile of the prison; and the medical officer neglecting to do so acts thus at his peril, and it is the duty of the governor to report such omission of duty." The discharge of this duty by medical officers of prisons "was one of the reasons put forth by the late departmental committee entitling medical officers of prisons to an increase of salary." Paragraph 59 states: "We do not find that the performance of this duty was stipulated for when the salaries of the medical officers were last fixed, although it was so stated to them by the General Prisons Board." It is inconceivable how any board could make such a mis-statement, or, having made it, be allowed to retain their places.

The report deals very particularly with the control and inspection of the various convict establishments in Ireland, and in paragraph 119 with the intermediate prison at Lusk. We think they are wise in recommending its discontinuance; they find that it is both useless and expensive. It may be that the distinctive character of Lusk—namely, the careful selection of its inmates—has been carried out too minutely. There were only twenty-four convicts there at the time the commissioners inspected it, and the cost of maintenance and staff combined reached the exorbitant sum of £86 per head. This is out of all proportion to any result obtainable.

We are glad to find that the report recommends the personal inspection of all convict establishments by the members of the board instead of the inspectors.

The diminution of the number of prisons in Ireland is also recommended, and we agree with the commissioners that the grouping together, as in England, of large numbers of prisoners is conducive to greater economy and efficiency, both in maintenance and treatment. Under the present system each prison has only a relatively small number of prisoners; as a consequence a large proportion are employed as wardsmen, cooks, cleaners, &c., which interferes with the task labour, trades, and education carried on. By consolidating the prison administration greater economy can be practised, better educational and labour results obtained, and a healthier *morale* initiated.

Space prevents our going into the report at greater length; it is in many respects a valuable addition to our knowledge of prison affairs in Ireland, and is the result of the protracted labour of an essentially able commission. They recommend changes in the board which we advocated last year, and which anyone cognisant with prison affairs in Ireland was satisfied must eventually be decided on.

We congratulate our medical *confrères* especially, as to them is largely due the beneficial changes in contemplation. Drs. Robert MacDonnell and Sigerson devoted much and valuable time to the question, and the interests of the medical officers were safe in their hands. The proceedings of the commission were conducted with thoroughness and tact, and we hope the result to the general administration and the medical officers will be the establishment of harmony and general co-operation the absence of which the report so much deplores.

WESTMINSTER HOSPITAL.—The Committee of Management of this hospital have decided upon a scheme to extend the accommodation for out-patients, the resident medical staff, and the nurses. The plan includes the erection of a new medical school apart from the hospital building. The estimated cost of the improvements is £16,000, £9000 of which has already been subscribed.

FRENCH HEALTH RESORTS.

(From our Paris Correspondent.)

ROYAT; MONT DORE.

THE waters of Royat, a pretty little town situated in a valley about half a mile from Clermont-Ferrand, are chloro-alkaline, lithic, and ferro-arsenical, which, according to the different sources they are taken from, are considered useful in a variety of affections, such as those comprised under the term arthritism (gout, rheumatism, eczema, &c.), and in chloro-anæmic and nervous ailments. They have also been found highly useful in uterine diseases, the successful treatment of which has obtained for Royat the title of the French Ems. Affections of the throat and lungs are also much benefited by these waters. They are gaseous, containing certain proportions of free carbonic acid, and of varied temperature. They are employed internally and externally. Their action in the economy is similar to that of the pure alkaline waters, without having any of the inconveniences of the latter, owing to their containing a large proportion of chloride salts and to the presence of iron and arsenic. The "Source César" is the most popular, and is more freely drunk with wine at the table than the water from the other springs. It is slightly stimulant and tonic, owing to the carbonic acid with which it is saturated. Taken in health, it has the effect of stimulating the mucous membrane of the stomach, develops the appetite, and considerably increases the urinary secretion. Taken at meals and mixed with wine, it facilitates digestion and relieves nausea when present. Its use is particularly recommended to persons of sedentary habits, and to those having much mental labour to perform; also to constitutions weakened by hard physical work, disease, &c. The bathing and hydrotherapic arrangements are most complete, there being a large swimming bath containing running water naturally tepid at 31° to 32° C., and suitable for patients of all ages. Dr. Boucomont, one of the principal physicians and inspector of the waters at Royat, showed me an apparatus of his own invention, by which a patient who cannot stand the shock of a cold douche has only his feet douched, without wetting the upper parts of his body. He has found this very useful in nervous patients, particularly those of the female sex, and in all cases of congestion of any of the viscera, even of the brain, which may be benefited by derivation towards the lower extremities. It struck me that such a mode of applying the douche would be useful in insomnia, but Dr. Boucomont said he had not yet tried it in such cases. But, besides invalids, tourists will find here sufficient opportunity to satisfy their scientific curiosity, whether it be in natural history, archæology, mineralogy, or numismatics. The same may be said, indeed, of the whole of Auvergne, which is laid out in charming landscapes, picturesque scenery, and a soil most varied in character. The range of volcanic mountains of this beautiful province, its druidical remains, its Byzantine churches, its mediæval castles, its pine woods, its cascades, and its torrents, all contribute to captivate the attention of the tourist. Royat is evidently a rising place, and deserves to be better known; but it is impossible for me, within the limits of a letter, to do more than scant justice to a health resort that possesses so many advantages over similar places in this or any other country. Anyone interested in this watering-place cannot do better than read a description of it in a little work by Dr. Boucomont, entitled "Les Eaux Minérales d'Auvergne," which of course contains information only from a medical point of view. The season begins about the middle of June and ends about the middle of September, the cure lasting about three weeks. The treatment should be continued for some time on the return home of the patients by drinking the bottled waters. Those from the César and St. Victor springs should be preferred for this purpose, as they are of a lower temperature, and are on that account, and from their containing a large proportion of free carbonic acid, better kept in a state of preservation than the water of the other springs, of which there are two: "La Grande Source," or what used to be called the "Source Eugénie," and the "St. Mart." They are particularly adapted to gouty and rheumatic subjects in the chronic or asthenic forms, who, being unable to visit the spa itself, are obliged to drink such waters for an indefinite period. They are also found particularly useful in the cutaneous manifestations connected with these diatheses.

On leaving Royat, I proceeded to Mont Dore, which is

situated about the middle of a valley surrounded by high mountains—the Capuchin, the Angle, and the Pic de Sancy, the last (the highest) being 6186 feet above the level of the sea. A vegetation of the deepest green covers the two sides of the valley, and the shades are lovely. Two cascades, the Dore and the Dogne, unite to form the Dordogne, whose limpid waters overflow the meadows at the foot of the valley. Mont Dore, which is in the department of the Puy-de-Dôme, is thirty miles to the west of Clermont, and is reached partly by railway and partly by an engineering road in diligences and carriages, winding up and across a charming country, which for beauty and grandeur may be compared to Switzerland. Its altitude is about 1050 metres, or about 3445 feet, above the level of the sea. Its climate is rather mild, the thermometer seldom rising above 86° F. in the two hottest months of the year (July and August), and rarely falling below 40° F. It is, after Barèges, the highest watering-place in France, and therefore favourable to debilitated subjects, and to those who cannot resist the heat of the plains. Notwithstanding what has been said and written to the contrary, I should consider it quite unsuited for phthisical patients in any stage of the disease, owing to the great fall of the temperature in the evenings, which are damp; yet invalids are to be found there in large numbers. Mont Dore is certainly one of the most ancient, if not the most important, thermal stations of France, having been known as such almost since the commencement of the Christian era; it was also much frequented by the Gauls and Romans, who had constructed there a vast establishment, as shown by fragments of columns and the ruins of a swimming bath, which may be seen at the present day. The waters of Mont Dore, which are the least mineralised of all the waters of Auvergne, have been classed among the alkaline bicarbonates. They contain chloride of sodium and sulphate of soda, with mere traces of iron and alumina. They also contain a small quantity of arsenic (about a milligramme to the litre), the presence of which latter would seem to justify their employment in pulmonary phthisis. The waters from the various springs, of which there are no less than seven, are hot, their temperature rising as high as 109° F. They all contain the same ingredients, varying only in quantity according to the different springs. Mont Dore is celebrated for its various kinds of baths, and its rooms for spray and inhalation. Herein the patients breathe the mineral waters reduced to steam; but I question the propriety of applying this treatment to phthisical patients, not only on account of its weakening powers, but of the known tendency of such treatment to produce congestion of the lungs, and thus determine spitting of blood. If Koch's theory as to the propagation of pulmonary tuberculosis by bacilli emanating from the lungs of phthisical patients be correct, there is here offered a favourable field for their dissemination through the atmosphere of these rooms (eight in number), which are small, communicating with steam boilers, and in which there are ten or twelve patients at a time divested of their ordinary clothes and dressed in a flannel costume made for the purpose. Here they breathe the same vapour with which the room is filled, and here they remain from fifteen to forty-five minutes, or as long as they can conveniently bear it. Moreover, the patients must run the risk of catching cold on leaving the "sudatorium," as it has been appropriately termed, although every precaution is taken against their doing so. According to the physicians practising at Mont Dore, the waters of this spa have been found most useful in all affections of the respiratory organs, including asthma and pulmonary phthisis, also in chronic rheumatism, gout, and congestion of the liver. Nasal catarrh with ozæna, of whatever origin, is successfully treated by the use of these waters, administered internally, but more especially by local irrigation with them. The latter is effected by the use of an indiarubber tube, but the operation must be performed with caution, and under the surveillance of a medical man, as headaches and even syncope have been induced by the water penetrating the frontal sinuses. Like all watering-places in France, Mont Dore is provided with the inevitable casino, which is composed of a theatre, ball-room, reading-room, rooms for billiards and other games, and for refreshments. It is not much frequented by foreigners, and this may account for the hotel accommodation not being equal to that obtained at the other stations, where the comfort of visitors, particularly English and American, is more studied. The season begins about the middle of June, and ends about the same time in September; but July and August are the months most favourable for following the course of treatment enjoined at Mont Dore. The waters should not be used for more than a fortnight on account of their exciting properties, and the local physicians should always be consulted in the matter. I may, however, observe that the waters are contra-indicated in persons of a languid circulation, and such as have a tendency to hæmorrhage.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Peterborough (*Rural*).—This district had in 1883 a death-rate of 17·3 and a birth-rate of 30·5 per 1000 living. Diphtheria was somewhat prevalent in the district, and, as so often happens, it exhibited a certain obscure relationship with scarlet fever. Speaking generally of the class of infectious diseases due to filth causes, Dr. Paley observes that the district has been comparatively free from them, a result which he attributes to the efficient removal of all sorts of filth accumulations from the vicinity of the dwellings of rich and poor alike.

Hendon (*Urban*).—Dr. Cameron gives a lengthened account of the continued prevalence of diphtheria and scarlet fever, which were so marked during the first nine months of 1883, and to which we at the time adverted, especially in connexion with Mr. Power's report on an earlier stage of the outbreak. On the whole, the general health of the district was much better at the end of 1883 than at the end of the previous year, and a hope is expressed in the report that the experiences of 1883 will prove to be exceptional in the history of the district. Seldom have recurrences of diphtheria proved so persistent, and this notwithstanding efforts made to prevent the diffusion of the disease by means of intercommunication. Estimating the population at 11,370, the death-rate was, considering the circumstances, remarkably low—namely, 15·7 per 1000. Hendon at last stands a chance of being efficiently sewered; the scheme has been submitted to and approved by the Local Government Board, and the work is, we trust, now in progress.

Rotherham (*Urban*).—This borough, with an estimated population of 35,650, had in 1883 a death-rate of 20·5 per 1000, this rate exhibiting a decrease not only on that of the previous year, but also on the annual average for the preceding ten years. Zymotic diseases were also less prevalent than formerly; but this is certainly not due to the completeness of the provision for arresting the progress of those affections which can properly be called infectious, for the borough is still unprovided with either an infectious hospital or a mortuary. Smoke is still a cause of much trouble to the town, it being deluged with carbon and deleterious gases, resulting from the wasteful methods of combustion which are in vogue. Substantial additions have been made to the work of sewering the borough, and a number of street improvements have been effected. But efficient sanitary regulation in connexion with bye-laws and the cattle market still calls for the attention of the authority.

South Shields (*Urban*).—South Shields, with a population of some 62,000, may be congratulated on having achieved a substantial reduction in its annual mortality. The rate per 1000 for 1883 stood at 20·9, but taking the means of triennial periods, Dr. Munro claims to show clearly the sanitary progress which has been effected. For the three years 1872–74 the rate was 25·8; that for the years 1875–7 was 22·7; that for 1878–80 was 22·6; and during the past three years the mean has stood at 19·7. This, too, is accompanied by a fall in the rate of infant mortality, the deaths under one year now standing at 13·9 per 100 registered births, as opposed to 14·9 in the fifty large towns. So also the rate for the so-called zymotic diseases was 2·27 per 1000, whereas in the fifty towns it was 2·46. The most important incident in the sanitary history of the year was the opening of the new borough infectious hospital, an establishment well adapted to the needs of the district, and subject to an excellent system of administrative regulations. During the year fifty-one patients came into the building, twenty-three of these being cases of scarlet fever, twelve of small-pox, seven of

typhoid, three of typhus, &c. Taking all the cases together the mortality was only at the rate of 1 in 17. The new facilities which the hospital affords of safely receiving at one and the same time cases of the different infectious fevers, and the comforts and prospects of recovery which it provides, are certain to make it a real sanitary success. Dr. Munro feels very strongly that one of the most potent instruments he can use in securing improved sanitation is to teach the people how to help themselves in the matters that concern health, and he has commenced work in this direction by organising a working class for women at which elementary lessons in physiology, nursing, the maintenance of healthy homes, and the management of infectious diseases have been given. The effort is certain to be successful if it is sustained, and it is to be hoped that it will receive support in the district. In the meantime, the current sanitary work not only goes on but steadily increases.

Sunderland (*Urban*).—This borough had in 1883 an estimated population of 121,117, the density per acre being 41·5. The births were at the rate of 41·7 and the deaths at 24·4 per 1000 living. But during the third quarter of the year the Victoria Hall catastrophe occurred, by which 178 little children lost their lives, and if these deaths are deducted the rate is reduced to 21·3. The relative mortality of infants under one year was at the rate of 137·8 per 1000 registered births, the lowest rate without exception in the twenty-eight large towns of the kingdom. The deaths from the diseases included by the Registrar-General under the term of principal zymotic were lower than in any of the preceding ten years—namely, 2·55 per 1000 inhabitants, and this notwithstanding a severe prevalence of typhus in the early part of the year and of the continued presence of small-pox in the third and fourth quarters. In all, small-pox caused 52 deaths and typhus 41. We have before commented on these two epidemics in connexion with the means of isolation that are available in the borough—namely, an old private residence utterly unfitted for the present purposes, and the infectious buildings at the workhouse. Against both these buildings, it is admitted, there exists great prejudice in the mind of the public, and deservedly so, for it is risky to go into the one lest the sufferer should contract a second disease, and it is degrading from a social point of view to go into the other. The number actually isolated was higher than in any previous year, 113 being removed to the borough House of Recovery and 180 to the Union Hospital. Amongst those thus removed 216 were small-pox patients. Compulsory measures of removal were not resorted to, and this because, as Mr. Harris admits, he would otherwise have made people paupers against their wish. How far this is reconcilable with the statement which immediately follows, to the effect that "very strong persuasive pressure was put on patients to avail themselves of hospital shelter," it is not for us to explain; but most people know that the power that can be obtained over persons lying helpless in sickness is one that also carries with it a considerable responsibility as to the rights and interests of the individual on whom it is brought to bear. Mr. Harris, however, certainly had the best interests of his borough at heart, and it is to be hoped that the episodes of the past twelve months will result in Sunderland being provided with a proper hospital to which patients can be sent in the interests of the health of their fellow citizens, without their being subjected to such risk or social degradation as cannot reasonably be demanded of them.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

During the week ending the 30th ult., 5618 births and 4245 deaths were registered in twenty-eight of the largest English towns. The annual rate of mortality in these towns, which had been 24·1 and 25·4 in the two preceding weeks, declined last week to 25·3. During the first nine weeks of the current quarter the death-rate in these towns averaged 23·4 per 1000, against 20·7 and 20·0 in the corresponding periods of 1882 and 1883. The lowest rates last week in these towns were 19·5 in Birkenhead, 19·7 in Derby, 19·9 in Bristol, and 20·0 in London. The rates ranged upwards in the other towns to 34·1 in Manchester, 35·4 in Blackburn, 37·5 in Halifax, and 37·8 in Preston. The deaths referred to the principal zymotic diseases in the twenty-eight towns, which had been 911, 1108, and 1314 in the three preceding weeks, declined last week to 1260; these included 967 from diarrhœa, 70 from scarlet fever, 69 from whooping-cough, 64 from measles, 52 from "fever" (principally enteric), 23 from diphtheria, and 15 from small-pox. These diseases caused the lowest death-rates in Derby, Bristol, and Plymouth, and the highest in Wolverhampton, Blackburn, and Preston. The highest rates of mortality from diarrhœa were recorded in Hull, Wolverhampton, and Preston; from measles in Halifax and Bolton; from scarlet fever in Leeds and Cardiff; and from whooping-cough in Sunderland. The 23 deaths from diphtheria in the twenty-eight towns included 16 in London and 2 in Portsmouth. Small-pox caused 12 deaths in London, 1 in Liverpool, 1 in Sheffield, and 1 in Sunderland. The number of small-pox patients in the metropolitan asylum hospitals situated in and around London, which in the seven preceding weeks had declined from 1368 to 587, further fell to 539 on Saturday last; the new cases admitted were 63, against 110, 64, and 53 in the three previous weeks. The Highgate Small-pox Hospital contained 20 patients on Saturday last, 4 new cases having been admitted during the week. The deaths referred to diseases of the respiratory organs in London, which in the four preceding weeks had declined from 198 to 157, rose last week to 181, and were 12 above the average. The causes of 103, or 2·4 per cent., of the 4245 deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Birmingham, Norwich, Newcastle-upon-Tyne, and in three smaller towns. The largest proportions of uncertified deaths were recorded in Preston, Salford, Bolton, and Halifax.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which in the two preceding weeks had been 20·7 and 21·8 per 1000, declined to 20·8 in the week ending the 30th ult.; it was 4·5 below the mean rate during the same period in the twenty-eight large English towns. In the Scotch towns the rates last week ranged from 15·0 in Perth and 15·4 in Aberdeen, to 22·8 in Dundee and 24·9 in Glasgow. The 503 deaths in the Scotch towns included 68 which were referred to diarrhœal diseases, 27 to whooping-cough, 8 to scarlet fever, 8 to diphtheria, 6 to measles, 4 to "fever," and not one to small-pox; in all, 121 deaths resulted from these principal zymotic diseases, against 109 and 141 in the two preceding weeks. These 121 deaths were equal to an annual rate of 5·0 per 1000, which was 2·5 below the average rate from the same diseases last week in the twenty-eight English towns. The deaths referred to diarrhœa, which in the two previous weeks had been 51 and 74, declined last week to 68, but were double the number in the corresponding week of last year; 36 occurred in Glasgow and 10 in Dundee. The 27 fatal cases of whooping-cough showed a further slight decline from recent weekly numbers, and included 11 in Glasgow, 5 in Edinburgh, and 5 in Aberdeen. Of the 8 deaths from scarlet fever, which were 6 less than the number in the previous week, 7 occurred in Glasgow. The 8 fatal cases of diphtheria also showed a decline, and included 5 in Glasgow and 2 in Edinburgh. The 6 deaths referred to measles corresponded with the number in the preceding week, and of the 4 fatal cases of "fever" 3 occurred in Glasgow. The deaths referred to acute diseases of the respiratory organs in the eight Scotch towns differed but slightly from those returned in recent weeks, and corresponded with the number in the same week of last year. The causes of 83, or more than 16 per cent., of the deaths in the eight Scotch towns last week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had risen in the three previous weeks from 22·4 to 30·3 per 1000, declined to 29·9 in the week ending the 30th ult. During the first nine weeks of the current quarter the death-rate in the city averaged 23·8 per 1000, the rate during the same period being 22·4 in London and 16·7 in Edinburgh. The 201 deaths in Dublin last week were within 3 of the high number in the preceding week, and included 65 which were referred to the principal zymotic diseases, against numbers steadily increasing from 16 to 45 in the five preceding weeks; of these, 48 resulted from diarrhœal diseases, 9 from scarlet fever, 4 from whooping-cough, 3 from "fever," 1 from diphtheria, and not one either from small-pox or measles. These 65 deaths were equal to an annual rate of 9·7 per 1000, the rate from the same diseases not exceeding 4·4 in London and

3·6 in Edinburgh. The fatal cases of diarrhœa, which had been 8, 22, and 25 in the three previous weeks, further rose to 48 last week. The 9 deaths from scarlet fever showed a decline of 4 from the high number in the preceding week. The fatal cases of whooping-cough showed a slight further increase upon recent weekly numbers, while those of "fever" corresponded with the number in the previous week. Four inquest cases and four deaths from violence were registered in the city during last week, and 34 deaths occurred in public institutions. The deaths of infants showed a further increase upon those returned in recent weeks, while those of elderly persons showed a decline. The causes of 39, or nearly 17 per cent., of the deaths registered during the week were not certified.

THE SERVICES.

ARMY MEDICAL DEPARTMENT.—Deputy Surgeon-General Francis Holton, M.B., retires on temporary half-pay; Surgeon-Major Joseph Bourke, late Medical Department, has been permitted to commute his retired pay.

ADMIRALTY.—Fleet Surgeon William Shute Fisher, B.A., M.B., has been placed on the retired list, with permission to assume the rank and title of Retired Deputy Inspector-General of Hospitals and Fleets; Staff Surgeon John Buckley has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet.

The following appointments have been made:—Surgeons George W. Low, Charles W. Hamilton, and Henry Harries, to the *Alexandria;* Surgeon Albert P. Wells to be Surgeon and Agent at Douglas, Isle of Man; Surgeon J. Claque, to be Surgeon and Agent at Castletown, Isle of Man; Staff Surgeon Hugh H. Hannay, to the *Britannia;* Staff Surgeon Heaver Sugden, to the *Hector;* Surgeon Edward Ferguson, to the *Rapid;* Surgeon John Ottley, to the *Vernon;* and Surgeon William H. O'Mears, to the *Repulse.*

Correspondence.

"Audi alteram partem."

TREATMENT OF ASIATIC CHOLERA.

To the Editor of THE LANCET.

SIR,—Notwithstanding the rapid and effective strides which sanitary science has made and is making, and the manner in which it is being applied to stay the progress of the common enemy cholera, it appears to me that the medicinal treatment of this disease, whether prophylactic or curative, is uncertain, and that the writers upon the subject in the medical press touch upon the subject in a delicate manner. If a number of professional men were asked what their treatment would be, their replies, I think, would vary in form, and would be contradictory. We have to deal with (1) a zymotic disease; (2) a disease where everything is rejected by vomiting, and (3) a disease in which rapid collapse takes place.

Treatment.—Put the patient to bed. Inject hypodermically a solution of carbolic acid (half a grain of crystallised carbolic acid in twenty drops of water) with a solution of hydrochlorate of morphia, which may be repeated at intervals, as necessary. Let him have a hot-air bath made with a lamp and cradle over the bed, or hot bricks wrapped in flannel, and applied to the soles of the feet and armpits. Let him sip freely and frequently of sulphurous acid lemonade with glycerine, of which the following is the formula: Sulphurous acid, one ounce; glycerine, three ounces; tincture of lemon, four drachms; syrup to eight ounces. Half an ounce mixed in a tumbler of water makes "sulphurous acid lemonade."

Diet.—Let his diet be composed solely of white of egg well beaten up, and mixed with an equal quantity of water, and given cool in small quantities frequently.

External treatment.—The patient to be sponged occasionally with hot solution of carbolic acid (as in small-pox, to protect the patient as well as the nurse). All soiled linen coming from the patient to be put into a like solution.

During an epidemic of cholera something important also may be done in the prophylactic way, by the administration of such medicines as will, we know, act as bactericidal antizymotics. An ingenious plan was adopted during a former epidemic by my friend, Dr. Jas. Arthur Power, by means of which all our households took anti-zymotic medicine inadvertently; the plan was the mixture of powdered hyposulphite of soda with ordinary table salt, in the proportion of a small teaspoonful to an ordinary salt-cellarful; thus a good antizymotic was administered daily in a tasteless form. A pill containing half a drop of creasote taken with meals is an excellent anti-zymotic remedy. All drinking water should be boiled and filtered and allowed to cool.

I am, Sir, your obedient servant,

Sydenham, August, 1884. F. EACHUS WILKINSON, M.D.

THE "METAPHYSICS" OF COMTE.

To the Editor of THE LANCET.

SIR,—Knowing something of the writings of Auguste Comte, and being well acquainted with the distinguished group of men who are the propagandists of his doctrines in this country, I am completely at a loss to understand what Dr. Moxon means by his allusion to the "most rubbishy metaphysics of Comte." It would, indeed, be hardly possible to devise a more incongruous phrase, for that great thinker claimed before all things to be the prophet and apostle of positive science; and if there be one feature of his system more distinctive than another, it is its complete divergence from, and antagonism to, metaphysical speculation. "The big, merciless hand," which Dr. Moxon deprecates as an attribute of our profession, may be wielded by the critic to malign the great as well as to crush the small, but the least we can look for is the exercise of some discretion in its use. It is the fate of Comte's philosophy to meet with assiduous misrepresentation; but no one who had ever read a line of Littré, of John Stuart Mill, of Buckle, or of G. H. Lewes, could fall into the ludicrous error of taunting it with being metaphysical. Indeed, it is not necessary to go beyond your own pages for the complete refutation of such an idea, which will be found well expressed in Dr. Walshe's able and scholarly papers on "Physiology *v.* Metaphysics in Relation to Mind," published in THE LANCET of this year.

I remain, Sir, your obedient servant,

Sussex-gardens, Hyde-park, Sept. 1st, 1884. T. FITZPATRICK.

VACCINE.

To the Editor of THE LANCET.

SIR,—I observe in your annotation of July 5th on "Vaccination in the Metropolis," you remark that arm-to-arm vaccination is "far more protective" than any other. I would respectfully ask if statistics are available to confirm this statement, for it has always seemed to me that a successful vaccination exhibiting the Jennerian vesicles is all that can be desired, let the source of the virus be human or bovine, tube, point or crust. If your position is the correct one, we have the curious spectacle of a human vaccinifer furnishing the ideal vaccine, without himself or herself having the best protection. In Canada the human crust is much used.

I am, Sir, yours truly,

Montreal, August 4th, 1884. T. D. REED, M.D.

*** Our words were, "arm-to-arm vaccination is far more protective than the use of stored lymph, whether it be human or animal." The reason for this statement is that vaccination with stored lymph "takes" with much less certainty, and often produces much smaller vesicles than vaccination done directly from arm to arm. See also the report of the medical officer to the Local Government Board for the year 1882, article, "The Animal Vaccine Establishment."—ED. L.

HOSPITALS FOR INFECTIOUS DISEASES.

To the Editor of THE LANCET.

SIR,—On my return from the seaside I saw the article on this subject by Dr. Wilson in your journal, in which he refers to a paper of mine read at the Society of Medical Officers of Health, and published (in part) in a medical contemporary. As the whole of the part referring to the "spot maps" I have made was left out in that abstract,

the evidence on which my statements were based is necessarily incomplete; otherwise I think Dr. Wilson would have come to another conclusion. He also observes that I said that the line of direction of alleged infection was against the wind. This is an error, as I said it should have been E.N.E. instead of S.E. and E.S.E., but that the wind probably veered a little without being noticed, as I note the direction only once a day.

I am, Sir, yours faithfully,

JOHN W. TRIPE, M.D.,
Medical Officer of Health for Hackney.

August 30th, 1884.

NEWCASTLE-ON-TYNE.

(From our own Correspondent.)

PROPOSED TESTIMONIAL TO THE MAYOR OF NEWCASTLE-ON-TYNE.

THERE was an important gathering of citizens in our Council Chamber on Friday last for the purpose of furthering the movement to present the mayor, Mr. H. W. Newton, surgeon, with a testimonial in recognition of his services in connexion with the recent Royal visit to Newcastle. The chair was taken by Mr. T. L. Gregson (our deputy mayor), an old and respected member of our profession, who made a graceful speech, in which he observed that he thought it would be discreditable if, after the admirable manner in which Newcastle had vindicated its loyalty, they did not recognise in a fitting manner the way in which the mayor had so successfully carried out all the proceedings in connexion with the recent Royal visit. He had seen himself several Royal receptions, but none in which hearty loyalty was so thoroughly accompanied by good order, excellent feeling, and sobriety as that of Newcastle. No doubt much of the work in connexion with the event had to be done by other people, but the crowning success was due to the exertions of the mayor in uniting all into the one effort of making the occasion of the visit a success. On the conclusion of the address a subscription list was opened, and about two hundred guineas were received. It is felt here, in the profession and outside of it, that our worthy mayor well deserves this recognition of his kind and intelligent attention to the wants and comforts of all classes of our citizens on the occasion.

THE DEATH FROM ENGLISH CHOLERA AT ALNWICK.

The Board of Health at Alnwick have had a special meeting in reference to the fatal case commented upon in your issue of last week. Some members have taken the coroner to task for sending a copy of the depositions to the Local Government Board; some are also severe on the medical officer of health for giving his evidence; but, so far, THE LANCET has escaped. One of the members stated that he had been informed that the man previous to his death had eaten fourteen fresh herrings and drunk two quarts of beer with a quantity of cabbage-water for a wager; be this as it may, the Local Government Board have taken the matter up, and have written to say that they have instructed their inspector, Dr. Spear, to visit the district at an early date and to inquire into its general condition.

SUNDERLAND INFIRMARY.

The past year, it appears, has witnessed the largest number of in-patients the institution has ever received, no less than 1482 having been treated. The average number of patients resident in the house daily has advanced from 104·1 in 1882–83 to 119·4 in 1883–84. The death-rate has been reduced from 3·8 per cent., as against 4·3 per cent. in the preceding year; and 70 per cent. of the patients have been cured. There were 231 patients in the children's wards during the year, and it is satisfactory to note that these wards are affording so much relief to the little sufferers of the town and neighbourhood. A very important point deserves full notice in connexion with Sunderland Infirmary; it is that the workmen's subscriptions from the various collieries &c. in the neighbourhood form the most important item in the income of the institution. The expenditure connected with the building, fitting up, and furnishing of the new wing of this very fine infirmary amounts to nearly £11,000, on which there is a debt, but not a very heavy one.

Newcastle-on-Tyne, Sept. 1st, 1884.

CANADA.

(From a Correspondent.)

THE COUNCIL OF THE COLLEGE OF PHYSICIANS AND SURGEONS, ONTARIO.

IT is confidently expected that this body is about to take some definite steps in the direction of securing power from the Legislature to deal in a severe and peremptory manner with a class of men who, after having obtained a medical diploma, prostitute themselves and their profession by engaging in a disreputable kind of practice, or by actually hiring themselves out to some daring adventurer who seeks to drive a good business by every possible form of advertising. To reason with such persons is utterly useless, as they have cast to the winds every rule of ethics which might be supposed to have any hold upon the members of the healing art. It is really to be hoped that the coming session of the Legislature will confer upon the College the power to remove from the Register the names of all who may engage in any such nefarious kind of practice.

CHOLERA PRECAUTIONS.

Although there is not much excitement regarding the prospects of a visit from this dreaded disease, very useful measures are being enacted. The larger cities are stirred up to a careful inspection of their sanitary condition. Dwellings and out-houses are being examined, all filth removed, and the streets and sewers well cleansed. In the maritime provinces, a quarantine has been ordered for all vessels from Marseilles and other suspected ports. The Ontario Board of Health is doing useful work by scattering information among the people, and inducing the smaller towns to put their houses in order.

A NEW MEDICAL SCHOOL.

It is now a certainty that there is to be a medical college in Winnipeg. Of course the North-western part of the Dominion is very vast as far as territory is concerned; but the number of practising physicians in it is not very great. The opportunities for clinical teaching in Winnipeg cannot be as good as in some of the more easterly and larger cities. Manitoba, however, is increasing rapidly in population, and there may be a useful and bright future before the young college. It is to be in affiliation with the University of Manitoba, which has instituted a very creditably high standard for the entrance examination.

HIGH-PRESSURE IN SCHOOLS.

At the Ontario Teachers' Association meeting the other day, Principal Grant, of Kingston, made a strong appeal against the system of too extensive a curriculum of study for young children. He took the ground that to ask too much from a child was to fail in getting any good work done. The mind, crowded with too many subjects, had not the time necessary for accurate study; while the habit of doing loose, imperfect work had a bad effect on the young mind, and was not education at all.

THE BRITISH ASSOCIATION.

It is certainly a noteworthy event to see this distinguished Association assembling in a city three thousand miles distant from York, where it held its first meeting in 1831. Mr. Phillips, a secretary of the Yorkshire Philosophical Society, acting on a suggestion in a letter to him from Sir David Brewster, issued invitations to the leading science men of Britain, and out of the meeting thus summoned has grown the present Association. Canada was but little thought of then, and was perhaps regarded as a wild woodland, the fitting home of the Red Indian. Many of the members of the Association intend to give the country a general visit, while quite a number have taken tickets for the Rocky Mountains and other points in the "far West."

August 15th, 1884.

THE RED CROSS ASSOCIATION.—The members of this Association, to the number of about 100, assembled at Geneva, on Monday last, this being its third international convention. The president is M. Moynier; the three hon. presidents are Professor Longmore, Professor von Langenbeck, and Count Sérurier; and Mr. John Farley is deputy chairman. The session will last a week.

ITALY.

(From our own Correspondent.)

"EVERY inch a king!" Such is the English equivalent for the words of gratitude, admiration, and pride with which Italy, from Turin to Brindisi, from Venice to Palermo, follows the tour of Humbert II. through the cholera-stricken communes. Two years ago, during the disastrous floods in the Venetian territory; last year, after the calamitous earthquake in the island of Ischia; this year, in the choleraic centres of Piedmont—the King has endeared himself to his subjects by his faithful reproduction of that heroic self-abnegation and paternal solicitude on their behalf which they love to associate with his sire, the "*Re galantuomo.*" Modestly attired in a low round hat, with walking-stick in hand, accompanied by the Prime Minister Depretis, by his adjutant, and by the local physicians, he has been visiting every hospital where the cholera patients are housed, going from bed to bed, inquiring into each individual case, taking note of the treatment and its results, addressing genial words of encouragement to the more despondingsufferers, and leaving substantial donations to each institution on his departure. Praiseworthy as such conduct would be in a country like ours, it is trebly so in Italy, where ignorance, superstition, and centuries of insanitary prejudice have added tenfold to the miseries and the dangers of the cholera epidemic. The suspicion of the patients and their friends that the physicians and priests are in league to poison them, or "choke them off anyhow," is but one of the many difficulties of the situation. In Piedmont, the least uncivilised of the Italian provinces, the district medical officers have come upon cabins, wigwams they may be called, where in one room lie huddled together father, mother, and half a dozen children of all ages, some of them moribund; some in the incipient stage of disease; some candidates for other maladies besides cholera, most of them stark naked, and all of them without fresh air, pure water, or wholesome food. Yet, even in these conditions, the medical officers find it next to impossible to remove and isolate the cholera patients. Where these have been torn from their surroundings and placed in some temporary *ricovero*, they have actually crawled back to their hovels, and nothing but military sentryship has sufficed to keep them in their new quarters when again brought back to them. Thanks to the King's visits, this morbid distrust of the medical man and his prescriptions is on the wane, and already in Busca and Cuneo, and their neighbourhoods, the epidemic is in full retreat.

Fortified by the Royal example, public men are redoubling their zeal in enlightening the popular mind as to the causes, the course, and the cure of cholera. A strikingly dramatic scene was witnessed the other morning at Peregallo in Lombardy. It was Sunday, and the people had assembled in crowds to hear the special prayers prescribed by the archbishop to appease the anger of the Almighty and to stay the scourge of cholera. The hour had been changed from the usual one of 10 A.M. to 5 A.M., in order to secure fresher air for the more numerous congregation. The mass was over, and in another minute the kneeling devotees would have risen to disperse, when suddenly a voice was heard sonorously and commandingly bidding them remain, and all eyes turned and fell on an old gentleman in white hair and of ruddy complexion from whom the words proceeded. In dead silence he spoke to the following effect:—"I take the opportunity of finding you assembled here to say a few words to you on the cholera. Your good priest, Don Antonio, by order of the excellent archbishop, has engaged you, as becomes his office, in matters which concern the soul. I as a layman and a member of the Communal Committee of Public Hygiene, will speak to you on matters which concern your body. Life has been given us by God, and it is our duty to guard it well and preserve it as long as possible; and I believe I am not desecrating this place by telling you how this, in the present circumstances, is to be done. The cholera is in full career throughout Italy. Workmen—mechanics without conscience, flying from the cholera-smitten towns of France, where they were employed, violating the sanitary cordon placed by Government on our confines, and refusing to submit to quarantine, where, after all, they are lodged and boarded gratis—have penetrated into the heart of Italy and carried the disease into many districts. So long as the danger was remote the syndics took precautions, and nothing more was thought of it. But now it is at our gates. Milan, Monza, and this neighbourhood have hitherto escaped attack; but not so Bergamo, Lodi, Treviglio, and Pescarenico. With the easy and frequent communication now established, we may from one moment to another have the enemy upon us, and we must therefore be prepared to repel it. First of all, let me enjoin on you cleanliness—cleanliness of your bodies and of your dwellings. Next, moderation in drinking and in eating. Finally, and above all, if any of you should have the ill-fortune to be seized with the malady, give immediate notice of the fact; prompt remedies can save you when delay would be fatal. We see how, by culpably persisting in concealing the outbreak at Spezia, the cases rose in twenty-four hours to sixty, of whom thirty-nine died. Yesterday I heard someone in his ignorance say, 'If I were seized with cholera, I would conceal the fact so as not to be taken to the lazaretto,' which is, when all is said and done, a pleasant enough domicile, quite isolated, with an agreeable exposure, conceded *ad hoc* by our excellent member of Parliament, Count Rinaldo Taverna, 'because,' added the individual, 'they give the patients poison there, of which they are sure to die.' These impressions are follies, which ought neither to be conceived nor uttered. Is it not the fact that the moment you feel ill, say with headache, you at once send for the doctor, and if he does not arrive forthwith and prescribe for you, you angrily upbraid him? And why is it that in the case of cholera you keep the physician at arm's length for fear he would hasten your death with poison? Does he not come to you in such a malady to the great risk of his own life? Would it not be less dangerous for him to leave you alone to die than come all the way to poison you? What interest can the medical man and the communal authorities who appoint him have in causing your death, when they would thereby be putting your widow and your orphans on the charity of the commune, which would have the burden of maintaining them? Be advised, then. The poison you seem to dread, given opportunely and in the proper dose, will be your salvation. You have seen my father, who, thanks to laurocerasus, which is a powerful poison, was cured, and lived for fifteen years, and yet a teaspoonful of it would kill you. It is a duty of conscience I am imposing on you. All of us have our lives at stake. I, in spite of my seventy-two winters, who would have but little to lose if I were stricken down with cholera, will continue to wear my flannel shirt and send for the first medical man the moment I require him."

The effect of this brief address was electrical. The people left the church profoundly impressed, and the harebrained chatter about avoiding the lazaretto, with its doctors and their drugs, has been heard no more in Peregallo. And who was the speaker? He turned out to be Signor Carlo Curti, a landed proprietor in the neighbourhood, a communal councillor, a patron of the Church, and superintendent of the communal schools. The leading Milanese journal printed the address pretty much as I have given it, and it is now being copied and circulated in other provinces, where it is much more required than in Lombardy.

In deplorable contrast to the wise words and philanthropic attitude of Signor Curti is the conduct of Signor Oliva, a well-known member of the Italian Parliament. On arriving at the Roman railway terminus, he declined to submit to the fumigation imposed on all passengers, and even used violence to the delegate of public security who was about to turn the carbolic spray upon him. Granting that such fumigations are medically useless, he had no right to contravene the orders of the Government. It would have cost him little to have undergone the process, which, be it remarked, reassures a vast number of his fellow citizens, and saves them from the panic which often invites the disease it dreads. The *Opinione* comments severely on the churlish demeanour of the *borné* lawgiver, and anticipates, on the reassembling of Parliament, a searching interpellation on the subject.

Rome, Sept. 1st.

HOSPITAL SUNDAY AT WESTON-SUPER-MARE.—The appeal on the 31st ult. in the churches of Weston-super-mare in aid of the local hospital produced £265. The offertories from other denominations are not yet complete, but is is hoped that these, with the out-town collections, will swell the total amount of the Hospital Sunday effort to £450.

Obituary.

FREDERICK CHAMBERS, L.S.A., J.P.

THIS old and highly esteemed practitioner died on Aug. 21st, aged eighty-three, at his residence, Vicarage-crescent, Margate. His death was caused by old age and the depressing effect of an abscess in the foot, the result of a suppurating corn; grief for the loss of his wife, who had died a few months before, having previously brought him into a low condition of health. Mr. Chambers studied at the London Hospital in the days of Sir William Blizard and Dr. Ramsbotham, and the history of his early life carries us back to the memory of the past. In 1820, whilst a ship-surgeon, he visited Pitcairn Island and stayed a fortnight with John Adams, of the *Bounty*; after travelling in various parts of the world he resumed his studies at the London Hospital, and in 1832 passed the Apothecaries' Hall. Subsequently Mr. Chambers carried on a successful practice in the Hackney-road for thirty-six years, after which he retired and settled in Margate, where he remained till he died. His residence in Margate proved a real blessing to the town. He found the place in a wretched sanitary condition; the inhabitants drank water from polluted wells, and pigstys and filth were everywhere paramount. In spite of abuse and opposition, Mr. Chambers fought earnestly and untiringly in the cause of sanitation; he attacked abuses without fear or favour, and in time brought about a better state of things. For many years he was a leading spirit in the town; he was three times mayor, was a guardian of the poor, a justice of the peace, and filled various other honourable and unpaid offices.

Mr. Chambers was esteemed and respected by all, but probably only his more intimate friends knew the full worth of his character; his love of truth, his hatred of all sham, and his staunch and never-failing friendship rendered him especially dear to these. His funeral, which took place at Margate on Tuesday, the 26th ult., was attended by the Mayor and corporation, and by his relatives and friends.

JOHN POPHAM, M.A., M.B.

WE regret to have to record the death in his seventy-eighth year of an old member of the profession and public servant, Mr. John Popham, late of Cork. He was a scholar, senior classical moderator, and Berkeley gold medalist of the University of Dublin. He held the M.B. of Dublin and of Cambridge, the licences of the King and Queen's College of Physicians, Ireland, and the membership of the Royal College of Surgeons of England. Mr. Popham was for many years senior medical officer to the Cork Union Workhouse, and for nearly forty-two years physician and chemical lecturer to the North Infirmary, Cork, once local secretary to the medical section of the British Association, and lecturer on materia medica to the Cork School of Physic. His contributions to the periodical medical press were both numerous and valuable. About two years ago he retired from practice and went to reside at Ealing, where he died on the 26th ult., after a few days' illness, of bronchitis and syncope of the heart, accelerated by the effects of an accidental fall.

Medical News.

APOTHECARIES' HALL. — The following gentlemen passed the examination in the Science and Practice of Medicine, and received certificates to practise, on Aug. 28th:—

Davies, Howard, The Ash Grove, Pontypridd.
German, Hanway, Maywood, Sevenoaks.
Green, C. R. Mortimer, St. Simon's Vicarage, Morpeth-street.
Uddin, Tamiz, Pump-court, Temple.
Wharry, Henry Gordon Oliphant, Gordon-square.
Wood, Edward, Oakles, Lansdown-road, Tottenham.

The following gentleman also on the same day passed the Primary Professional Examination:—

Congdon, George Julius, Guy's Hospital.

BRITISH MEDICAL SERVICE. — In the list of successful candidates published last week, for "H. P. James" read "H. D. James."

ON their visit to Hull next month, the Duke and Duchess of Edinburgh have consented to take part in the ceremony of laying the foundation stones of two wings to be added to the Hull Infirmary.

ACCIDENT TO A GYMNAST.—Another case of serious injury resulting from perilous gymnastic performances has occurred at Blackpool. It is surely time these sensational exhibitions were prohibited, in the interest alike of audience and performers.

TWO remarkable cases of blood-poisoning in Suffolk have been reported. In one of them the morbid process seems to have been induced by a slight wound of the arm resulting from a fall on stubble; in the other case a farm labourer cut his finger with a wheat straw, the arm became greatly swollen, and the man died.

IN the endeavour to ascertain the cause of a serious outbreak of fever which occurred in Beverley a short time ago, the municipal authorities commissioned an eminent sanitary engineer to investigate the health conditions of the town. The report presented by that gentleman inculpates the water-supply—a charge which the water company repudiates, and undertakes to refute.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The following is the list of officers for the ensuing session: President: Mr. F. Lawrance. Vice-Presidents: Drs. Alderson, Travers, Thudichum, and Pickett. Council: Mr. Barnes, Dr. Clippingdale, Mr. Swinford Edwards, Mr. Hemming, Mr. J. R. Lunn, Mr. Potter, Mr. Walker, Dr. Hart Vinen, Mr. R. F. Benham, Mr. C. B. Keetley, Dr. Owles, and Surgeon-Major Scriven. Treasurer: Mr. Alfred Cooper. Secretaries: Dr. Campbell Pope and Mr. Gunton Alderton. Meetings are held on the first Friday in each month, at 8 P.M., at the West London Hospital.

HAWICK COTTAGE HOSPITAL.—The memorial stone of this hospital was laid with masonic honours on the 30th ult. by the Earl of Mar and Kellie. The scheme for the erection of the hospital originated in 1882, when the surplus of the proceeds of the Combe Lectures by Dr. Andrew Wilson formed the nucleus of a fund which now amounts to nearly £3000. The building, which will contain fourteen beds, with space for more, will, with the grounds, cost about £1600, and the remainder of the funds will be applied towards the maintenance of the institution.

THE MALODOROUS LIFFEY.—The recent sultry weather has made this river a source of annoyance to the citizens of Dublin by the disgusting effluvia emanating from it at low tide. That these noxious gases must be deleterious there can be no question, and from a sanitary point of view the river is a disgrace to the corporation and citizens. The subject is ventilated and brought into notoriety every summer, and then gradually subsides until again resuscitated the following year. The main drainage scheme in the present highly taxed condition of the city seems impossible; but some more economical method which would remove the nuisance might surely be adopted.

SUICIDE OF A SURGEON.—The "Australasian Medical Gazette" reports the following sad event:—Mr. Griffith Job Jones, L.R.C.P. Edin., 1879, M.R.C.S. Eng., 1880, a medical officer connected with the Destitute Asylum, committed suicide in the York Hotel, Adelaide, on June 22nd, by taking a large quantity of chloroform. In a letter addressed to Dr. Way he gives as a reason for the rash act the inquiry which was pending as to the outbreak of ophthalmia amongst the Industrial School children at Magill that were under his charge, which appointment he had held for about six weeks. The deceased was twenty-six years of age.

DUBLIN MEDICAL STUDENTS' CLUB. — Several members of the medical profession resident in Dublin have issued a circular appealing for aid in starting a "furnishing fund" for this Club, which has hitherto, it is satisfactory to note, been self-supporting. The sum of £200 is asked for, and it is requested that contributions may be sent to Mr. W. G. Ternan, L.R.C.S.I., 91, Harcourt-street, Dublin. The circular is signed by Messrs. J. K. Barton, President of the Club, Session 1882–83; W. I. Wheeler, President of the Club, Session 1883–84; D. J. Cunningham, Vice-President; W. Stoker, Vice-President; F. J. B. Quinlan, Vice-President; W. Thornley Stoker; T. Alcock Nixon; and W. G. Toomey, LL.D., who undertake to supervise the disbursement of all sums contributed, and to see that they are applied only to the purpose for which the money is subscribed.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning at the latest.*

BATTEN, GEORGE B., M.B., C.M.Ed., has been appointed Assistant Medical Officer to the Fife and Kinross District Asylum, Cupar.

BERESFORD, CHARLES WILLIAM, M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Markyate-street District of the Luton Union, vice Mackey.

BURBY, HENRY B. PULLEN, L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer for the Fourth District of the Petersfield Union, vice Pearse.

CORNER, M. CURSHAM, L.S.A.Lond., has been appointed Resident Medical Officer to the Tower Hamlets Dispensary, vice Samuel E. Pritchard, L.R.C.P.Lond., M.R.C.S., deceased.

FORSYTH, WILLIAM, L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer to the Tirhut State Railway, and stationed at Muzafferpur.

FOWKE, FREDERICK WILLIAM, M.R.C.P.Ed., M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Priors Marston District of the Southam Union, vice Culhane, resigned.

LOWE, GEORGE, M.B., C.M. St. And., L.R.C.P.Ed., has been appointed Medical Officer for the Eighth District of the Depwade Union.

MASKEW, JOHN S., L.R.C.P.Ed. &c., has been appointed a Medical Officer to the New Forest Union, vice R. W. Jenkins, deceased.

SPICER, R. H. S., M.D., has been appointed Medical Officer and Public Vaccinator for the North Molton District of the South Molton Union, Devon, vice James Flexman, resigned.

VIANT, HY., L.R.C.P.Ed. &c., has been appointed Medical Officer of Health for the New Forest Rural District, vice Jenkins, deceased.

WHITE, BARRINGTON SYER, M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Horsmondea District of the Tonbridge Union.

Births, Marriages, and Deaths.

BIRTHS.

ADAMS.—On the 30th ult., at Clifton-gardens, W., the wife of G. D'Arc Adams, M.D., of a daughter.

GAYFORD.—On the 28th ult., at Lady Margaret-road, London, N., the wife of Charles Gayford, M.R.C.S., late of Hoshangabad, C.P. India, of a son, stillborn.

GRAY.—On the 29th July, at Cinnamara, Assam, the wife of Edward Gray, M.B., C.M., of a son.

LANKESTER.—On the 29th ult., at Gwendwr-road, West Kensington, the wife of Herbert H. Lankester, M.R.C.S., of a daughter.

MARRIAGES.

BUCK—BEARE.—On the 30th ult., at the Church of St. Leonard, Streatham, London, Charles William Buck, M.R.C.S., of Settle, son of the late Richard Hardacre Buck, of Settle, Yorkshire, Solicitor, to Emma Foote, third daughter of William Beare, of Roboro Villa, Streatham, S.W., and Rathbone-place.

LATHAM—BERNARD.—On the 28th ult., at the Parish Church, Whitby, Peter Wallwork Latham, M.B., Downing Professor of Medicine, Cambridge, to Annie Frances Bernard, second daughter of the late James F. Bernard, of Clifton.

PARSONS—COLE.—On the 23rd ult., at St. John's, South Hackney, Charles W. Parsons, M.R.C.S., L.S.A.Lond., to Alice, eldest daughter of H. B. Cole, Esq., of Hackney.

SEWELL—WHITELAW.—On the 26th ult., at Rowmore, Row, Dumbartonshire, by the Rev. William Dunn, of Cardross, William R. Sewell, M.D., of Helensburgh, to Jessie, daughter of Alexander Whitelaw, Esq.

STRADLING—RENNY.—On the 29th ult., at St. James's, Shirley, Hants, William Arthur Stradling, M.R.C.S., C.M.Z.S.Lond., &c., of Watford, to Emmaline Isabella (Lina), second daughter of Thomas Renny, Esq., of Durham Lodge, Shirley, and Arequipa, Peru.

DEATHS.

BROWNE.—On the 30th ult., at Ramsgate, after a brief but painful illness, John Collis Browne, M.D., late H.M. 98th Regiment, aged 64.

GARRARD.—On the 27th ult., suddenly, at his residence in Kington, Herefordshire, George Samuel Garrard, M.R.C.S., in his 59th year.

LYDALL.—On the 28th ult., at Exmouth, Devon, Wykeham Hawthorne Lydall, L.R.C.P.Ed., late of Mecklenburgh-square, London, aged 46.

MICHAEL.—On the 29th ult., at 1, The Circus, Bath, Surgeon-Major David Michael, F.R.C.S.E., in his 52nd year.

WORSLEY.—On the 30th ult., at his residence, Hornby House, Heywood, near Manchester, James Henry Worsley, M.R.C.S.Eng., aged 43.

YOUNG.—On the 31st July, at Bequia, St. Vincent, West Indies, James Justine Henry, infant son of James Vance and Mary Louisa Young, aged 14 days.

N.B.—*A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET OFFICE, September 4th, 1884.

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Max. Temp. Shade	Min. Temp	Rain fall	Remarks at 8.30 A.M.
Aug. 29	29·71	N.W.	59	53	111	67	53	·02	Bright
,, 30	29·93	W.	59	56	85	69	53	..	Overcast
,, 31	29·82	S.W.	67	64	91	79	57	·10	Overcast
Sept. 1	29·64	W.	61	60	94	68	50	·15	Raining
,, 2	29·76	W.	61	56	111	69	55	·27	Cloudy
,, 3	29·75	S.W.	59	55	96	69	53	·03	Cloudy
,, 4	29·43	N.	55	54	..	..	54	·09	Raining

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for publication or private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe, or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

THE STUDENTS' NUMBER OF "THE LANCET" will be published on Saturday next, Sept. 13th. Those gentlemen holding official situations connected with medical institutions in the United Kingdom who have not yet forwarded the necessary information to our Office for publication in that number are earnestly requested to send it *without the delay of a single post.*

AN "UNPROFESSIONAL" DOCTOR.

THE author of "Between the Heather and the Northern Sea"—a capital tale appearing in *Good Words*—thus describes one of the characters in the story: "Dr. Armitage was a man whom it was good to have near you in such a moment [a case of sudden and serious illness]. He was the most unprofessional of professional men. Though you had stood by a dozen sick beds with him, you did not associate him with the sickness or with the gloom, but rather with all alleviating things—the smiles, the small pleasantries, the newest bit of lively news, the first hope he had given you, the last laugh he had had over your too tearful despondency. If he had been with you in a dark moment, you only remembered his skill, his quiet strength, his unfailing sympathy."

St. George's.—Notably in therapeutics.

TREATMENT OF THE BITES OF THE "HARVEST BUG."

To the Editor of THE LANCET.

SIR,—Dr. Cornelius Fox's letter of inquiry as to relief from the bite of the "harvest bug" (Septus autumnalis), and Dr. C. S. Taylor's reply, containing careful preventive measures by sulphur fumigation, are interesting; for only those who are worried by these autumn pests can sympathise with any effort to rid themselves of them. I have been staying at the picturesque and healthy little seaside resort of Hythe, near Folkestone; and being troubled with these pests, I found a liniment composed of a drachm of spirits of chloroform and camphor, and two grains of bichloride of mercury, to four ounces of rosewater, a good application to allay the irritation caused by them. The character of the insect, together with the symptoms caused by the bite, are described in my Lectures on Parasitic Eruptions of the Skin, published by Messrs. Lewis and Son in 1881. A little camphorated oil rubbed into the skin of the legs and arms will generally prevent these attacks.

I am, Sir, yours obediently,

Sackville-street, W., Sept 2nd, 1884. JAMES STARTIN.

THE LATE DR. MILLER OF SOUTHSEA.

DR. H. A. MARTIN of East Cosham, Hants, presents his compliments to the Editor of THE LANCET, and will feel greatly obliged by his permitting a copy of the enclosed to be inserted in the next issue of his journal, on behalf of the widow of the late Dr. Moore Miller, J.P., Southsea, who died in July last, leaving her in very straitened circumstances.

"Some friends of the late Dr. Miller are desirous of presenting his widow with some substantial mark of their appreciation of his merits, and of their respect for his memory. Any donation will be gladly received by Captain McCoy, Elm Grove Villa, Southsea; or can be paid into Messrs. Grant and Co.'s Bank, Portsmouth or Southsea, to the joint names of Admiral Chads and Captain McCoy."

Atropos.—Dr. Burney Yeo on Health Resorts and their Uses (Chapman and Hall).

Mr. R. Durdin will find in our next number the information he desires.

"SKILLED NURSING."

To the Editor of THE LANCET.

SIR,—As the letter in your issue of last week signed "E. Faithfull" is in many respects misleading, and evidently written without a clear knowledge of facts, may I, as the superintendent of an institution for nurses, say a few words in reply? First, a nurse does not (except in monthly nursing, in which the training is short, and consequently has to be paid for, as the nurse quits the hospital as soon as she is efficient) expend a considerable amount of money in attaining proficiency. Time, as a matter of course, she must give, but no longer than would be required to turn her out a thorough dressmaker or lady's maid. In all general hospitals a nurse receives a salary almost from the first, and uniform after the first few weeks. If at the end of her training she elects to enter an institution, she receives a salary of from £20 to £25 per annum, according to her capabilities, and in some homes uniform as well, and "everything found." She has only her clothes to provide from her salary, and if she has only herself to keep she ought to be able to save at least from £7 to £10 a year. Added to her salary must be taken into consideration the presents in money or other things that she often receives. Miss Faithfull says a nurse in an institution earns but a "bare subsistence," and that all her earnings are forfeited to the home, as if the nurse received no equivalent. But if we look at facts it is not so. Say a nurse gets, as mine do after their first six months' service, £25 per annum, and when not at work 1*s.* 6*d.* per week laundry money; reckon her board at 10*s.* a week and her lodging at 5*s.*, and she is receiving the equivalent of nearly £70 per annum, without including extras or beer money. In few employments would she make more money with less trouble. Now as to the non-resident nurses. Some institutions do, I believe, take half the fee; none more than half, and some only 5*s.* in the guinea. The rate of fee is certainly fixed by the institution; but the nurse knows what it is before she undertakes it, and the fact that many nurses prefer to work in this way proves that it cannot pay them badly. Miss Faithfull further speaks of nurses being harassed with many restrictions, and mentions two. That regarding the testimonials is not correct in all cases. I myself only hold the testimonials that the nurse earns in my service, and which is, in fact, a private communication to the institution. These are always at hand, if needed, and it is a common thing for a nurse to ask a patient for a duplicate for herself. In the interests of our clients we could not permit nurses to be transferred from one patient to another without our knowledge, as this would leave them at liberty to throw up any case, however critical, for one more lucrative.

There are, as your advertisement columns testify, many good existing institutions in London, to say nothing of suburban and country ones; and I think it would be far better to encourage the already existing institutions, all of which have been patiently worked up and perfected by experience, and so enable them to offer higher pay to their nurses, than to start fresh ones. I will venture to state as a fact that the lot of a nurse in one of the homes Miss Faithfull writes to disparage is far superior as to comfort and independence to that of many governesses; and I hope other institutions will speak up for themselves, and prove that our nurses are earning more than a "bare subsistence," and that if they do not save it is generally their own fault.—Yours faithfully,

ELINOR AGNES BEDINGFELD,
The Belgravia Institute for Trained Nurses, Superintendent.
Vauxhall-bridge-road, Sept. 2nd, 1884.

*** Several other letters on the above subject have reached us, but our space will not allow of their publication.—ED. L.

CURIOUS FACT IN NATURAL HISTORY.

To the Editor of THE LANCET.

SIR,—I wish to communicate a curious and, so far as I know, unprecedented fact in natural history.

A tenant of mine near London had a pet dog and cat. Lately the cat was delivered of a litter of what should have been kittens, but which appeared to be a cross between the dog and cat. The gardener's wife, who assisted on the occasion, states that there was a litter of four, born dead. All of them had puppies' heads and forelegs, and the hinder parts like kittens. The mother was so much injured that she had to be killed. They were all buried before I heard of it.

I am, Sir, yours truly,
Wing Vicarage, Leighton Buzzard, Aug. 25th, 1884. P. T. OUVRY.

CHOLERA AND SUPERSTITION.

EVEN the most civilised countries are remote enough from that sanitary millennium when every citizen shall have been taught to be "the intelligent custodian of his own health"; but surely the revelations of the *Echo di Bergamo* point a very serious moral to the Government of Italy. "The prevailing superstition," says that journal, "is incredible, and not confined to the people only. Everyone shares it. Physicians are distrusted. Medicines are suspected. We know of a place where people are ready to swear that the district doctor receives twenty lire (sixteen shillings) for every cholera patient who dies under his treatment, and that when his victims amount to a thousand he is rewarded with a pension! The result of this deplorable superstition, of which we could give many more examples, is that not only is the physician never sent for in time, but when he arrives his services are refused. Moreover, as it is generally the priests who send for him, the suspicious friends of the patient, knowing this, decline to call in the priest. Both priest and physician generally reach the bedside when the patient, quite capable of being rescued a few hours earlier, is past prescribing or praying for." Thus far one of the leading journals of Northern Italy. Another journal tells us that of the (about) 30,000,000 Italians more than 16,000,000 are *analfabeti*—i.e., can neither read nor write.

Dr. T. W. Hime.—The notice appeared in our last issue, page 370.

P. B.—We do not give medical advice.

CURIOUS CAUSE OF DISLOCATION OF THE SHOULDER.

To the Editor of THE LANCET.

SIR,—The following case of the true "subclavicular" form of dislocation of the shoulder may be of interest to your readers, not so much from the comparative rareness of the injury as from its unusual cause.

F. T——, aged nineteen, a muscular young man, was swinging himself standing on the seat of a garden swing. Whilst alternately lowering and raising his body by bending his knees, to propel himself, and with his hands extended over his head grasping the ropes, he suddenly "felt something give in his left shoulder-joint," the shock causing him to fall to the ground, though without striking the injured limb. On my stripping the patient's chest a well-marked case of complete "subclavicular" dislocation of the shoulder presented itself. The head of the humerus was seen to be lying quite internal to the coracoid process, and occupying the space just under the middle third of the clavicle, the coracoid process itself projecting considerably, with a very marked depression beneath it. An attempt to reduce the dislocation was made without anæsthesia being induced; but, on account of the pain caused by movement and the nervousness of the patient, it was not persevered in. However, under the influence of ether the head of the bone was easily brought into its proper cavity by appropriate traction, with the heel in the axilla.

The case is worthy of record as showing the great amount of muscular action that must have been exerted to have produced so marked an injury.—I am, Sir, yours truly,

HERBERT E. FRIEND, L.R.C.P. Lond.
Talbot-road, W., Aug. 23rd, 1884.

ALCOHOLIC PARAPLEGIA.

To the Editor of THE LANCET.

SIR,—In your issue of June 28th mention is made of alcoholic paraplegia. As far back as fifteen years ago two cases of alcoholic paraplegia came under my treatment at Lucknow. The abuse of alcohol was not given up, and both died. Some years after a third case came under my notice. I do not know whether he died, as I lost sight of him. There is a person buried in the cemetery here, who, I am told, died of paraplegia; he also had been a hard drinker. All these cases occurred in men. The spinal nerve centre of the lower extremities appears to have been the region most affected. Some years ago a case came under my notice in a person who was certainly not addicted to an excessive use of alcohol. On sitting down to dinner and drinking a glass of sherry he would experience a curious feeling of helplessness in his lower extremities, which passed off by taking food and more wine. It appears that the first impact of his alcoholised blood on the nerve-centre of his lower extremity produced these phenomena. Such a person, had he habitually drunk to excess, would very probably have had paraplegia. Why this nerve-centre should be specially affected I do not know; but there appears to be some elective action on the part of this centre for alcohol. The want of coördination in the movements of a drunken man's legs must, I think, depend on this same effect of alcohol.

I am, Sir, yours truly,
E. BONAVIA, M.D.,
Etawah, India, Aug. 8th, 1884. Surgeon-Major, I.M.D.

PERFORATED RUBBER KNEE-CAPS.

To the Editor of THE LANCET.

SIR,—Under the heading of "New Inventions" in your last issue Mr. Thomas of Birmingham introduces an indiarubber knee-cap with perforations. Stockings and knee-caps on this plan were introduced more than thirty years since. They were tried by practical men, and I may say never came into use, as their great inferiority to other contrivances was manifest.

I am, Sir, yours truly,
Old Cavendish-street, W., Aug. 29th, 1884. EDWARD HUXLEY.

F. J. B.—1. 300 cubic feet, if there exist proper means of ventilation by windows and chimney.—2. According to the quality of the gas. A cubic foot of gas in combustion will unite with from 0·9 to 1·64 cubic feet of oxygen, and produces on an average 2 cubic feet of carbon dioxide, and from 0·2 to 0·5 grains of sulphur dioxide. In other words, a cubic foot of gas will destroy the entire oxygen of about 8 cubic feet of air. One cubic foot of gas will raise the temperature of 31,290 cubic feet of air 1° F. Wolpert has calculated that for every cubic foot of gas 1800 cubic feet of air must be introduced to dilute properly the products of combustion. A common small gas-burner will burn nearly 3 feet per hour, and will consume 10, or probably 12, cubic feet in an evening of four hours, and therefore from 18,000 to 21,600 cubic feet of air must be introduced for this purpose alone in the four hours, unless the products of combustion are removed by some special channel.

WHAT IS A MINIM?

To the Editor of THE LANCET.

SIR,—Having sought an answer to the above question in various dictionaries, with no more satisfactory result than to learn that it is "the smallest liquid measure—a single drop," I next referred to Thompson's "Conspectus of the Pharmacopœia," hoping to find there at least some safe indication. In the appendix to that invaluable little compendium I find the minim defined, by its relation to the fluid drachm and ounce, as $\frac{1}{7680}$th part of "a gallon"; but it is only by the juxtaposition of an identical subdivision of the "wine gallon" that I infer that it is to the wine gallon that the minim is thus related. Now, the wine gallon is known to contain 231 cubic inches, while the imperial gallon contains 277·274. Hence the two stand to each other in the practically exact proportion of 5:6. Therefore, since the weight of the "imperial gallon" (of water) is by law 10 lb., or 70,000 grains, that of the "wine gallon" will be five-sixths of 70,000 grains; and consequently the minim (of water) must weigh $\frac{5}{6} \times \frac{70000}{7680} = \frac{350000}{46080} = 0{\cdot}9494$ gr.—which is for all practical purposes the same as $\frac{15}{16}$ths of a grain; in other words, twenty minims of water weigh nineteen grains, and one fluid drachm weighs fifty-seven grains.[1]

Now, before I had worked out this theoretic result, I had sought for one practically by weighing a minim glass filled up to the sixty-minim mark (having first counterpoised the empty glass), and had found the weight to be 54·6 grains. It might, of course, be a mere accidental coincidence; but it is to be noted that at this rate eight drachms, or one fluid ounce, weighs 437 grains, which (allowing for an error of one-tenth of a grain in my measurement, thus bringing it up to 437·6) is exactly one ounce avoirdupois.

Now, whereas the proper weight of one fluid drachm is 57 grs., and the actual weight by trial of the contents of a drachm measure was found to be 54½ grs., or one-eighth of an ounce avoirdupois, the question arises whether the manufacturer confused the fluid and the avoirdupois ounces, or only made a grossly erroneous measure which accidentally tallied with the wrong one. The former seems much the most likely solution, which would be easily tested by the examination of several glasses; and it is to draw attention to what I conceive to be a systematic blunder that I make this communication.—Yours obediently,

J. HERSCHEL, Lieut.-Col. R.E.

Collingwood, Hawkhurst, Sept. 2nd, 1884.

INFANTILE CIRCUMCISION.

To the Editor of THE LANCET.

SIR,—Having been asked to circumcise a new-born infant, and being away from any suitable book of reference, will any of your correspondents kindly tell me the simplest method of doing so, especially as to number and kind of sutures used in the operation, local anæsthesia, &c.?

I am, Sir, yours obediently,

Aug. 27th, 1884. FOREIGN PRACTITIONER.

*** Local anæsthesia is not to be recommended. Draw the prepuce in front of the glans, and grasp it there between the parallel handles of a pair of scissors or some similar body, and shave it off by cutting close in front of the scissors; then allow the skin to retract, slit up the mucous membrane along the dorsum, and turn off the two flaps so made, taking care to go quite back over the corona glandis. These mucous flaps should be pared off a little, and then stitched to the skin by a continuous suture of fine catgut; this secures exact apposition, and does not require removal. A long narrow strip of boracic acid lint should then be firmly wound around the part, leaving the end of the glans exposed for micturition; and every time the parts are wetted with urine they should be thoroughly soaked with a saturated solution of boracic acid in water, and the dressing may be left on for a week or ten days, when the wound will be found healed. Care should be taken to remove first the skin which covers the glans. In infants the slight hæmorrhage is generally best controlled by placing the penis in a sponge, and grasping it firmly for a few moments.—ED. L.

[1] Should any reader be able to find this relation of the minim to the grain elsewhere stated, it would, I think, be satisfactory to others as well as myself to obtain a reference to the authority. Meanwhile, it is at the same time corroborated by the common belief that the minim and the grain are almost convertible terms, and also helps to explain that belief. That this belief, however, should be so deeply rooted as to find expression in actual graduation of glasses, I should certainly not have expected.

Mr. J. C. Richardson.—There is no definite arrangement on this subject. Some coroners are very chary of supplying copies of depositions to the public; others will do so freely, on payment of a clerk's fees for paper, copying, &c., at so much a folio. Generally, if the person desiring information can supply the correct name of the deceased and the date of the inquest, the coroner's clerk will, on personal application, answer any questions gratis to a *bonâ fide* inquirer.

Dr. Ward (Sutton Coldfield).—In an early number.

POISONING BY ICE CREAM.

To the Editor of THE LANCET.

SIR,—In your issue of Aug. 2nd a few lines are devoted to the statement that a large number of people have been recently poisoned in Brooklyn by acetate of copper contained in ice cream. As a practitioner who had ten of these cases to treat during the night of July 4th, perhaps you will allow me to state the facts in these interesting cases.

Mr. G. H. G——, a confectioner of Brooklyn, N.Y., doing business at No. 829, Fulton-street, prepared a large quantity of ice cream of various flavours for sale during the day and evening of July 4th, most of which was sold in the usual course of trade, part being eaten at the shop, and part being delivered in freezers at private residences, the manufacturer and his family also freely partaking of the delicacy. From midnight of July 4th the physicians of that part of the city known as "The Hill" were busily engaged in relieving the sufferings of about 150 people who had eaten cream prepared by Mr. G——. The symptoms in all the cases were severe pains in the hypogastric and epigastric regions, with violent vomiting and purging, and in many cases serious collapse, with blueness, coldness, and shrinking of the skin, very like that seen in cholera. About a dozen cases were more than a week in perfecting convalescence. So far as I know, none of the victims observed any unpleasant taste with the cream; at all events, the confectioner and three of his family were among the sufferers. Some stupid persons started the acetate of copper cry, and it was of course published in the daily papers before, unfortunately, being corrected to *lactate* of copper, as it was said the cream must have been sour; but no metallic taste was noticed, nor were the tinned copper freezers found to be at all worn, so as to permit erosion of the copper.

An analysis was ordered at once by the Board of Health, and the result, communicated to the Board on July 14th, 1884, by Dr. E. H. Bartley, chemist to that body, was substantially as follows. The flavours used were vanilla and lemon, both properly made from the natural fruits. No metallic or other poison was found. The results depended somewhat on idiosyncrasy, as not all who partook became ill. In one case six persons ate freely of the cream, only four being made ill thereby. During the analysis of the cream Dr. Bartley noticed an extremely fetid odour evolved. This would seem to suggest that the cream, even before freezing, could not have been in sound condition; but as the cream came from two out of twenty-seven packages sent from the country, the other twenty-five causing no illness when made up into ice cream, and as the ill-fated two cans of Orange County cream represented the joint product of fifty-two dairies, it has hitherto been found impossible to point out the dairy whence the bad cream came. The illness was certainly not due to metallic poisoning; it may have been caused by the development of some of the very numerous alkaloids of decomposition, of which the "ptomaines" are best known—the so-called "cadaveric alkaloids."

So far as known no fatal cases have presented themselves; many of the patients have, nevertheless, been dangerously ill.

Within a few weeks another, but much smaller, series of cases has occurred in this city, due apparently to the use of artificial vanilline ($C_7H_5CH_3O_2$) or methyl-proto-catechine aldehyde—very far from being a stable body. The symptoms were somewhat similar, but the distress greater, and the prostration very marked.—Yours truly,

NELSON B. DE S. SIZER, M.D., B.Sc. (Neo-Ebor. Univ.).

Brooklyn, N.Y., Aug. 19th, 1884.

THE LATE DR. HILTON FAGGE.

To the Editor of THE LANCET.

SIR,—Dr. Moxon's sketch of the late Dr. Hilton Fagge is so true to life, so remarkable for its beauty of thought and intellectual vigour, and for its reflected interest as between the public and the profession, that I venture to express the hope that Dr. Moxon may be induced to reissue it in the pamphlet form.—I am, Sir, yours faithfully,

Sept. 3rd, 1884. X.

Ignoramus.—Alex. Redgrave, Esq., Factory Department, Home Office, Whitehall.

Sigma.—The principal no doubt has a rightful claim to the fee.

THE PINK FUND.

To the Editor of THE LANCET.

SIR,—Please publish the following additional subscriptions to the above Fund:—Mr. G. E. Norton, Gloucester-place, £1 1s.; Mr. L. Druitt, Clapham-road, £1 1s.; A. G., £1 1s.; Miss Smith, Clifton, 10s.; Mr. J. P. Atkinson, Surbiton, 10s.—I am, Sir, yours truly,

Montague-place, W.C., Sept. 2nd, 1884. JOSEPH ROGERS.

ERRATUM.—In the second part of the Bradshawe Lecture, published last week, twenty-first line of the second column of page 358, for "nerve" read *mere*.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Lady John Manners; Dr. Heron, London; Dr. Philipson, Newcastle-on-Tyne; Dr. Joseph Rogers, London; Dr. Bonavia, Etawah; Mr. E. Huxley, London; Dr. C. T. Williams, London; Dr. H. V. Carter, Bombay; Dr. Peregrine, London; Dr. Fitzpatrick, London; Mr. J. C. Lucas, London; Mr. McKinney, London; Mr. J. R. Forrest; Mr. Startin, London; Mr. H. Sewill; Mr. E. W. White, Canterbury; Dr. Ward, Sutton Coldfield; Mr. Walters; Dr. Mynlieff, Brenkelen; Dr. Scott, Bacup; Mr. Freeman; Mr. Green; Mr. Anderson; Mr. Jones, West Bromwich; Mr. Brown; Mr. Herschel, Hawkhurst; Mr. W. S. Richmond; Dr. C. Pope, London; Dr. Gordon Holmes; Dr. Dolan; Mr. B. Duke, Clapham; Mr. W. Gilbert, London; Mr. Allender, Roehampton; Mr. H. S. Reynolds, Castle Donington; Mr. A. Westmacott, London; Mr. N. Alcock, Ballybrack; Dr. Eshelby, Burbage; Mr. Howe, Bath; Mr. Morris, Swansea; Mr. Riordan, Burff; Dr. Armstrong, South Shields; Mr. Burley, Manchester; Dr. MacLeod; Mr. Cross; Dr. Vintras; Mr. Turner; Mr. Hughes, London; Dr. T. Williams; Mr. Banks; Mr. Young; Mr. Ambaran, Kundler; Mr. Michael; Messrs. Bose and Co., Dinapore; Dr. Markham Skerritt, Bristol; Mr. Husband, Leeds; Dr. Sizer, Brooklyn; Dr. Martin, East Cosham; Dr. Grabham, Wallington; Dr. Uhler, Baltimore; Dr. Barrs, Leeds; Mr. Urquhart, Edinburgh; Dr. Tripe, London; Mr. Calley, Norwich; Dr. Ewart, Salisbury; Dr. Wiltshire, London; Dr. Bailey, Marple; Mr. J. F. Popham, London; Mr. Pratt, Wivelscombe; Mr. Barker Smith, London; Mr. Beattie Campbell, London; Mr. Kesten, London; Dr. Ferguson, Toronto; Dr. Cameron, Huddersfield; Mrs. Bedingfeld, London; Mr. Mayo Robson, Leeds; X.; WAX; J. C. A.; Foreign Practitioner; A. B. B.; L. C.; Observer.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Lennox; Dr. Taylor, St. Cervan; Dr. Moulding, Liverpool; Mr. Davies, Aberdare; Mr. Thomson, St. Leonards; Mr. Breffit; Mr. Coleman, Cardiff; Dr. Bowes, Bedford; Mr. Delworth, Preston; Mr. Nason, Bampton; Messrs. Savory and Moore, London; Messrs. Wright and Co., London; Mr. Burcombe, Lincoln; Mr. Montgomery, Londonderry; Dr. Fallon, Hull; Dr. Black, Glasgow; Mr. Watt; Mr. T. Brown; Dr. Guelpa, Paris; Mr. George Lawson; Mr. Wright; Mr. Smailes, Honley; Mr. Lang, Southport; Mr. Haywood, Manchester; Mrs. Harrison, Bath; Mr. Worsley; Mr. Hood; Mr. Shadwell, Ealing; Dr. Cook; Mr. Husethwaite, Ramsgate; Dr. Codling, Ancaster; Mr. Birley; Mr. Whitmore, Darsley; Mr. Dowse, Manchester; Messrs. Aspinall and Son, Darwen; Mr. Humphrey; Mr. Branfort; Dr. Eberle, Thirak; Mr. Lewis, Bath; Mr. Heaton, St. Asaph; Mr. Taylor; Dr. Stevens, Newington; Mr. McMunn; L.R.C.P.; 44; M.R.C.S.E.; Moing; A. C. B.; Zeta; Medicus, Brixton; B., Stratford; Medico; Medicus; Bookcase; Carpus; B. D.; Medicus, Ryde; Medicus, Cambridge; Ergates; Neuroses, Bembridge; Midland; T. J. C.; Scalpel; Alpha, Newbury; Oliver Twist; Medicus, Bridgwater; J. H.; Alpha, Bristol; A. L. X.; Alpha, Chester-le-Street; M.D., Edinburgh; G. W.; E. E. S., Newcastle; Secretary, Bath; Bury Infirmary; H. A. M., Petersham; H. E. R., Dalston; F. C. A. J.; Surgeon, Brighton; Jakter; M.B., Edinburgh.

Liverpool Courier, Pioneer, Calcutta Englishman, Dumfries and Galloway Standard, Edinburgh Courant, Middleton Guardian, Brighton Times, Bath Argus, Alnwick and County Gazette, Port Elizabeth Telegraph, Liverpool Echo, Dundee Advertiser, Tenbury Advertiser, &c., have been received.

Medical Diary for the ensuing Week.

Monday, September 8.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M
ST. MARK'S HOSPITAL.—Operations, 2 P.M., and on Tuesdays at the same hour.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

Tuesday, September 9.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour. Ophthalmic Operations on Mondays at 1.30 P.M., and Thursdays at 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
INTERNATIONAL HEALTH EXHIBITION, HYGIENIC LABORATORY.—4 P.M. Mr. Chas. E. Cassal, F.I.C., F.C.S.: Air and Air Analysis.

Wednesday, September 10.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.—Ophthalmic Operations on Tuesdays and Thursdays, at 1.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.—Skin Department: 9.30 A.M., on Tuesdays and Fridays.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.—Skin Department: 1.45 P.M., and on Saturday at 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M.
INTERNATIONAL HEALTH EXHIBITION, HYGIENIC LABORATORY.—4 P.M. Mr. Chas. E. Cassal, F.I.C., F.C.S.: Common Poisons.

Thursday, September 11.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.
NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.

Friday, September 12.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.
INTERNATIONAL HEALTH EXHIBITION, HYGIENIC LABORATORY.—4 P.M Chas. E. Cassal, F.I.C., F.C.S.: Methods of Food Analysis.

Saturday, September 13.

KING'S COLLEGE HOSPITAL.—Operations, 1 P.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M

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